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WHILE THE IRON IS HOT

THE proposal for the establishment of a National Film Institute, which is the main recommendation put forward by the Commission on Educational and Cultural Films in its Report on "The Film in National Life,"* comes at a most opportune moment. The film in this country has made sufficient progress to rouse great expectations and even individual enthusiasm. At the same time, the very improvement which has taken place in the quality of British films and the experiments which our more enterprising producers have undertaken make more glaring the contrast between good and bad films, and stimulate the kind of criticism which demands stricter censorship.

Two pleas are put forward in *The Film in National Life*; one for the taking

of constructive rather than restrictive action in order to raise the level of film programmes; the other for the introduction of some co-ordinating agency into the chaos of commercialism which at present hampers the exploitation of the many cultural possibilities of the cinema. We have heard laments without end over the difficulties which, from the box-office point of view, prevent it being worth while to show good films except in a few favoured localities, or to produce educational films which would encourage our schools to give the new medium of visual instruction a fair trial. Stress has been laid upon the paltry number of projectors installed in schools, colleges and public institutions in this country and this absence of projectors has been put forward as a good reason for not producing films for the

* Allen & Unwin, 1s.

educational market. On the other hand, the absence of suitable educational films prevents the schoolmaster and the university lecturer, the scientist and the social worker, from incurring the expense of buying apparatus.

How is this vicious circle to be broken? Has anyone yet put forward a practicable proposition which offers a way of resolving the dilemma, apart from the setting up of the proposed National Film Institute? Such an Institute, backed by the approval of Government and placed on a clear official basis, is the only kind of body which could undertake the propaganda that is necessary for welding the vague aspirations of the public towards better films in the ordinary cinema-hall into a concrete demand which producers and exhibitors could take notice of as an economic proposition. The pages of *The Film in National Life*, indeed, not only provide the first authoritative survey of what the film might do in this country for science, art, religion, politics, industry, education and the Empire. They must also make every thoughtful person realise the enormous amount of spade-work which has to be put in before fruits can be gathered in each of these fields. Many experiments will have to be undertaken and the results noted and analysed. Machinery for co-operation between the film trade and the intellectual and artistic interests of the country must be established.

No kind of interference with commercial enterprise, no sort of imposition of control or restriction from above, is even hinted at in this Report. The functions of the proposed Film Institute are definitely

laid down as inspirational, propagandist and co-operative. The Institute would naturally work in close liaison with whatever organisation the film industry builds up for itself to co-ordinate the production and distribution of films throughout the Empire. As an instance of the part which it could play, let us take the need for information. At present, all over the country—and still more in the Dominions and Colonies—there are administrators, teachers, social workers, students and members of the film-going public who are anxious to see films on particular subjects or to know what films of special interest to them are being produced. No authoritative organisation at present exists for supplying this need, much less for helping to follow it up by arranging for the loan or exchange of films upon reasonable terms. If a Film Institute were opened tomorrow, it would be overwhelmed with applications from one end of Britain to the other for advice and help of this sort.

Yet service as a clearing-house for information is one only of the functions of the proposed Institute, involving the preparation of catalogues and the establishment of a national loan collection of films. If this kind of action is earnestly desired by educators—taking the word in its widest connotation—then now is the moment for them to raise their voice in favour of the new proposal, and insist that whilst all the circumstances are propitious, and before any particular sectional or vested interest has had time to ‘crab’ the idea, a National Film Institute should be brought into being and given a fair chance to realise the ideals set forth in *The Film in National Life*.

A MESSAGE FROM SIR JOHN REITH

Director-General of the British Broadcasting Corporation

I should like to wish every success to SIGHT AND SOUND. It is of supreme importance that in the exploitation of applied science the single aim of the advancement of culture and intellectual standards should be recognised as an ideal by all of us. It is of no less importance that public discussion of the means thereto which such a paper provides should be developed in such a way as to create a sense of public responsibility in cultural fields as far-reaching and important as those of broadcasting, the cinema and the gramophone.

NOTES OF THE QUARTER



THE ARITHMETIC LESSON: from a film taken at Chesterfield by Stuart Legg (New Era)

AN acute and penetrating comparison of European and American broadcasting was drawn by Mr. William Hard in his address during May to the National Advisory Council on Radio in Education, at Buffalo, New York. The difference between governmental and private control of broadcasting, he argued, comes out not so much in the 'entertainment' part of the broadcast programme as in the treatment of public affairs. As regards entertainment, "it is true that in private broadcasting there is inherently a stronger streak of originality. It is true that in governmental broadcasting there is negatively a slenderer streak of vulgarity. Dominantly, nevertheless, each country gets in radio 'entertainment' a fairly faithful reflection of its own civilisation." But in public affairs, and especially education for practical citizenship, a broad line of distinction in principle can be drawn. "European broadcasting to-day," he said, "still displays on the whole a certain superiority in volume of programmes dealing with the academic *background* of citizenship. American broadcasting on the other hand continues to display to-day on the whole a clear superiority in volume and in vigour of programmes dealing with the instant *practice* of citizenship." For examples of this Mr. Hard goes to the treatment of politics at times of general election. "In Germany, France, and even in England," he points out, "the governmental air is the private kennel of the political top-dog." Even in Austria, where no political broadcasting at all is permitted "silence advantages the *status quo*." During the United States Presidential campaign, not only the official representatives

of the orthodox parties, but independents of all kinds are encouraged to broadcast. But even in England, says Mr. Hard, only "veteran jockeys from the established stables" have been allowed to speak at election time. "Other elements pined for air. They were refused it." European governmental broadcasting (under which term is included Britain) "is almost always ardently hospitable to neutral collegiate political science. It is frequently hospitable to official political personages in power. It is sometimes hospitable to official political personages on the possible immediate way to power. It is almost never hospitable at all to

those unofficial and irregular political personages, like Borah and many other familiar American radio orators, who try to storm the political fortifications of the present on behalf of their dreams of the future." In international affairs a similar situation prevails. America, under private broadcasting, actually received from Geneva during the Disarmament Conference period as many broadcast talks as the whole of the rest of Europe (including Switzerland) put together. No wonder Mr. Hard confesses that "I sometimes deeply resent the European charge that American radio is dedicated solely to programmes of so-called commercialisation." He comments that "European governmental broadcasting, which in theory might be concentrated upon governmental problems, is in fact dedicated peculiarly to the promoting of private individual culture. American private broadcasting, which in theory might be mindful only of the affairs of private life, is in fact specially superior in advancing the copious and comprehensive discussion of immediate Government policies and solutions.

Children's Matinees

Proof that the public responds eagerly to good films if exhibitors have the courage to offer them is afforded by the success which has attended the season of children's matinees provided this spring by British Instructional Films Ltd. in conjunction with Associated British Cinemas Ltd. We are glad to hear that an average of ten thousand children each week attended the Saturday morning shows which were given in London, while similar success attended the performances given at several provincial cinemas, particularly in Norwich and in Newport. This reception has naturally encouraged the promoters of the enterprise to announce its continuance and extension next autumn. Requests

have come in from local authorities in all parts of the country, asking that similar shows shall be given in their districts. Accordingly the list of theatres is to be considerably extended, both in London and in the provinces. There is no doubt that the idea has come to stay; its adoption will do much to prove that the cinema is capable of providing good healthy entertainment for children.

An Educational Film Programme

The question "What is an educational film?" has received answer at several recent practical demonstrations. For example, the Commission on Educational and Cultural Films recently showed a programme of films drawn from existing sources, designed to illustrate the idea put forward in its Report *The Film in National Life*. In response to requests from individuals and organisations who might be interested in seeing these films themselves, we give a list of the items shown, classified according to their utility for educational purposes:—

The Film in relation to Industry—PORT SUNLIGHT* (Lever Bros.)

The Film in relation to Science—WAR IN THE TREES* (The Woodwasp Film made for the Imperial Forestry Institute at Oxford).

The Film in relation to Civics—TOWN PLANNING (German film produced by Schwenk Co.)

The Film as Propaganda—TOMATOES and EMPIRE TIMBER (Empire Marketing Board Film Department).

The Film as Instruction—48 PADDINGTON STREET* (The first attempt to use the talking film as an aid to language teaching).

The Film in relation to Music—BRASS CHOIR (analysis of the Orchestra, a Western Electric Film).

The Film in Current Affairs—SUBMARINE* (adaptation of a news reel).

The Film in Adult Education—ENGLAND AWAKE* (historical and propagandist film, comparing period after Napoleonic Wars with present day economic depression).

The asterisked films are obtainable from British Instructional Films Ltd.

Experiments in Scotland

The Scottish Educational Cinema Society, which is supported chiefly by school teachers, is to be congratulated upon the efforts which it is making to bring the film to the notice of Scottish educators as a serious "aid to teaching." Demonstrations extending over two days and covering eight hours of film programme were given on June 10 and 11 in the McLellan Galleries at Glasgow, the object being to show examples of educational films resulting from co-operation between school teachers and film producers. Among the films shown were the following: a film on hurdling (an experimental production of the Society) illustrating the application of the film to physical training and sport; a film on geography entitled AUSTRALIAN AREAS (E.M.B.); a film entitled CANALS (E.M.B.) exemplifying the use of diagrams; and a film describing a week in a boys' brigade camp. These films were shown on 9.5 mm. projectors, Pathoscope Lux models being used with patent screens by A. Martin & Sons (Glasgow). The Scottish Educational Cinema Society aims at collecting 9.5mm. copies of as many suitable films as there are available, and forming the nucleus of a library of educational films. It has experimented in the production of classroom films

and is now carrying out experimental production on local subjects. Its studio is situated at 129, Bath Street, Glasgow, and it is seeking increased membership and financial support. Sir Charles Cleland, K.B.E., is Honorary President of the Society.

Lectures with Film Illustrations

Arrangements have been made for a course of lectures to be given by Mr. Clow Ford at the City Literary Institute next winter with cinematographic illustrations. The course is the second of a four-winter series entitled "The Bases of Human Culture"; last winter the course dealt with the inanimate universe; the coming session will be concerned with the system of animate nature.

In its use of regular cinema illustration this course, it is believed, will be the first of its kind and constitutes an educational experiment that promises to be of great value. In the present state of film production there is bound to be some difficulty with the selection of the films; but, as the subject lends itself admirably to film illustration, the effort appears worth making. Cost also raises difficulty: a special additional fee will be charged to students, the amount of which will depend on the enrolment; but it will not be more than a shilling for each evening, and may possibly be reduced to sixpence or less. A portable projector will be used and the films drawn from whatever sources are available.

The New Cinematograph Fund

By a modest but sufficient majority of 18 the House of Commons, on a free vote, accepted on June 29th the important new clause proposed by Mr. Oliver Stanley on the report stage of the Sunday Performances (Regulation) Bill, whereby 5 per cent. of the profits of Sunday cinemas are to go towards forming a fund to be used, under the direction of the Lord President of the Council, for the development of the film as a means of entertainment and instruction. In spite of considerable misrepresentation in certain organs of the Press, the influential support given to the proposal by Colonel Buchan, Lord Eustace Percy, Sir Gervais Rentoul, Mr. R. K. Law, Mr. Vyvyan Adams and other M.P.'s has proved sufficient to turn the scale in its favour. The purpose of the new clause is to provide a secure and independent source of income for the National Film Institute which is to be set up as a result of the recommendations made in *THE FILM IN NATIONAL LIFE*. The success which has so far attended the efforts of the Commission on Educational and Cultural Films is indeed remarkable. It is doubtful if history can record another example of an unofficial commission presenting a report of such weight and general acceptability, leading to legislative action within *three weeks* of its publication! The adoption of the new clause is a clear indication of the general public desire to see the standard of films improved in this country. The film trade cannot afford to disregard this desire, and we hope that, now that the new clause is accepted, all sections of the trade will co-operate with the Commission in helping to launch the new Institute under the most favourable auspices.

ART-FORMS IN SPEECH

By T. H. Pear

Professor of Psychology at the University of Manchester

IT is the interval at a symphony concert. Smith, a trained musician, is listening to the opinions of Brown, a man who knows what he likes. Brown prefers *L'Après-midi d'un Faune* to the Bach fugue. Smith, unusually tolerant for a musician, answers "Why not?" Brown, encouraged, proceeds to add that he prefers the Debussy "because it has more form, more structure." There are limits . . . Smith, deciding that Brown has overstepped one, deals with him.

But what if the subject of discussion were not music but speech? All around us we hear "criticisms" of public speech. Some critics confine themselves to the quality of the sounds emitted by the speaker. This is useful, but only as a beginning. At the Queen's Hall, one assumes that Casals will bring a satisfactory 'cello, at Wimbledon that Borotra's grip, footwork and body balance, to say nothing of his racquet, will be good. Criticism would improve the voice-production of our public speakers. Yet what they say and how they put it are more challenging and difficult problems.

The 'forms' of music; the Mass, the symphony, with its constituent movements, the sonata, the concerto, these have "settled out" from their earlier, possibly less structured types. The critic is expected to recognise them. Moreover, he is not encouraged to dilute his judgment too much with personal preferences. Nobody invites him to quarrel with a *Ländler* because it is not a Sullivan hymn.

Do not art-forms exist in speech, perhaps less generally recognised; some old-established, some transitory, some uncontritely new? Can we hope for useful criticism of the effectiveness and beauty of speech if there is no recognition of and respect for these different forms? Here is an unarranged list of a few; the talk, either 'straight' or transmitted by radio, the story, religious speech, oratory (religious, patriotic and political) the recitation, the school lesson, the lecture (didactic, instructional, inspirational) the commanding type of speech—(characteristic of the staff officer, the N.C.O., the teacher, the prefect, the foreman, the ruling classes), forensic speech, the discussion, the debate, the committee. Last of all, three relatively new forms, the unruffled, efficient, courtly telephone-conversation, speech in the radio-play, where even 'unearthly' sentences are possible, as in Miss Clemence Dane's *Will Shakespeare*, and the speech-choir, best known perhaps in Germany.

It seems likely that many of these forms and others yet unknown will become more important now that the microphone and the telephone have established themselves. Yet are our present-day critics of speech well equipped for their job? Can they tell us when and how any particular specimen

of a speech form falls below or rises above the respectable average? Would their criticism stimulate experiment as judicious encouragement from the world's best musical critics might inspire a rising Berg, Bax or Bliss?

I doubt it, but perhaps at present this is asking too much. I will try to illustrate my perplexity.

Some time ago a discussion was broadcast. The speakers had previously decided not to take that easy path, a debate. They agreed to avoid those points upon which they held opinions so different that no real discussion would be possible. So far as I know, not a single debating parry or thrust was attempted. Yet in a long and kindly article the radio critic of a leading daily newspaper described the discussion as a debate, criticised it as if it were one, and ended by suggesting that in future a studio-audience should listen and record their votes. Presumably the presence of this 'gallery' would stimulate the performers to play to it, and become bruisers.

It is doubtful if either speaker would have consented to solicit the votes of a debate-audience, except for fun and privately. Therefore, the speakers may have failed to convey the idea of a discussion, the critic may have been debauched by debates—a probability if his undergraduate days were still fairly recent—or both may have been at fault. Nevertheless, the postulate that a first-class debate and a first class discussion would be recognisably different remains a reasonable one.

It is a mournful possibility that several older art-forms of speech are fraying at the edges and some even deliquescing in the middle. This seems to be true of many forms of political oratory. From the average political meeting the younger generation stays away with great resolution. Together with the 'younger middle-aged' generation it holds strong views concerning the ways in which the microphone exposed certain politicians' speech-techniques last autumn. From the armchair in a quiet room, listen to broadcast after-dinner speeches. You may be led to the belief that recent bio-chemical changes in the diners have much to do with their enthusiasm. Some charitable soul has recently published a book of 500 stories for after-dinner speeches. This should improve matters temporarily.

The forensic speech-form is the product of a restricted, if elaborate skill. It is interesting to observe it in a committee chiefly composed of critical people who are not lawyers. The effect is as if three men prepared to play lawn-tennis on an ordinary court were joined by a fourth who persisted in playing some other ball game at the same time. In favour of the legal speech-form are its articulate-ness and its characteristic courtesy, though the latter occasionally stirs up feelings of inferiority or

suspicion in sturdy souls, unused to this special treatment. There is often audible in legal speech an apparent finality convincing to anyone who forgets that he may soon hear the speaker's dicta opposed with equal finality by another lawyer, using a similar speech-melody.

There is, of course, the authoritative speech-form. Its bitten-off sentences with their astringent timbre can be heard in the tones of the staff officer, and a more highly-coloured variety in those of the sergeant-major. Both these speech-forms suit their special function and are often successful when used for other purposes. Yet it is sad to hear the tones of the orderly-room bouncing off the stony hearts of a University Senate.

Let us now consider the lecture. It is in a bad way. Even the word is unpopular. "I don't want to be lectured," people say. Several times each evening the B.B.C. provides the country with lectures, almost invariably excellent in matter and frequently in manner. Yet it calls them talks. The broadcast 'talk' is not always a lecture; sometimes it is an essay or a newspaper article. Rarely, in the last winter, has it been a talk. Talks nowadays are usually read while university students, at least, hope that lectures will be talked. The lecture is grumbled at by university students, oftener perhaps than the non-academic person would believe. Many lecturers, growing up to this tradition, have no desire to justify themselves or even, for the fun of it, to hit back. A few, assuming protective colouration, 'run down' lectures themselves, though the title of their post specifically implies their obligation to lecture. In some universities, lectures are compulsory for undergraduates, in others, a discriminating tutor can tell them which lecturers they can avoid with impunity or profit.

The case against lectures has been put by Mr. H. G. Wells in *The World of William Clissold* and *The Work, Wealth and Happiness of Mankind*. Based, however, upon Mr. Wells's view concerning

the present and future functions of the universities, it crumbles in part if one denies his postulates. But only in part. Few university lecturers could regard their duties with complacency after absorbing Mr. Wells's observations.

Nobody, I think, has recently shown enough energy, courage or pride in his craft to put the case for the university lecture. Nobody tries very hard nowadays to defend English sugar-beet or certain types of English-made film. Perhaps all three need no justification but their own existence.

The opinion that the art-forms of the 'talk' and the lecture ought to be developed separately, and not allowed to lose their respective advantages in a characterless fusion is held by a number of thinking people. Mr. Vernon Bartlett, who won his spurs at the microphone years ago, doubts if the average professor can ever be made into a good broadcaster. Though I still hunt vainly for the average professor, I share this doubt. Mr. St. John Ervine roundly, or flatly, declares that the B.B.C. ought to have a 'talks dramatist' to foster the development of this new speech-form until more people have learned and extended the art of radio-talking.

Will academic persons who have something new to say consent to try to say it in a form more difficult for them and easier for the hearer? Can the B.B.C. persuade them to adopt a style hitherto reserved for the common-room? Is it like coaxing a Forsyte to entertain his friends in a public park? Will the talks-dramatist encounter in his pupils unplumbed depths of mental narcissism? And how will he deal with them? Will he publish his experiences in a book entitled "Lectures, Lecturing and Lecturers"?

An interesting, challenging problem in human relationships. I wish him luck. Essential to his success will be the provision of critics whose judgments will be respected. Effective speech should be given as much serious attention as music, drama or cricket.

A MESSAGE FROM PROFESSOR ERNEST BARKER

Professor of Political Science, Cambridge

I have been learning so much myself of late by 'sight and sound'—partly from seeing Russian and French films, and partly from hearing broadcast music regularly—that I welcome sincerely an attempt to complete my education by telling me 'What's What' in these large realms. I am sure that all of us who are still learning, and all of us who are still helping others to learn, will profit greatly by a quarterly account and review of all the new ways of doing both. There is only one danger about these 'modern aids to learning'; but it is so obvious to us all that I am sure we shall all avoid it. It is so easy to sit, and just see and hear; but real learning and teaching are never too easy, because they both involve a painful effort of the mind and a genuine 'discipline.' The new 'aids' cannot spare us that effort and discipline, but they can do two other things—they can reward us for making it, by giving us sights and sounds which we can really understand and enjoy after we have gone through the sweat and toil; and they can illustrate and corroborate what we have made an effort to learn—and so fix it firmer and deeper in our minds.

AN EXPERIMENT
IN ADULT
EDUCATION

WITH THE CINEMA IN DEVON

By

F. G. THOMAS

Mr. F. G. Thomas, of the Workers' Educational Association, describes the results of an experiment in visual education among the villages of South Devon. Some of his audience in two typical villages can be seen in this composite photograph



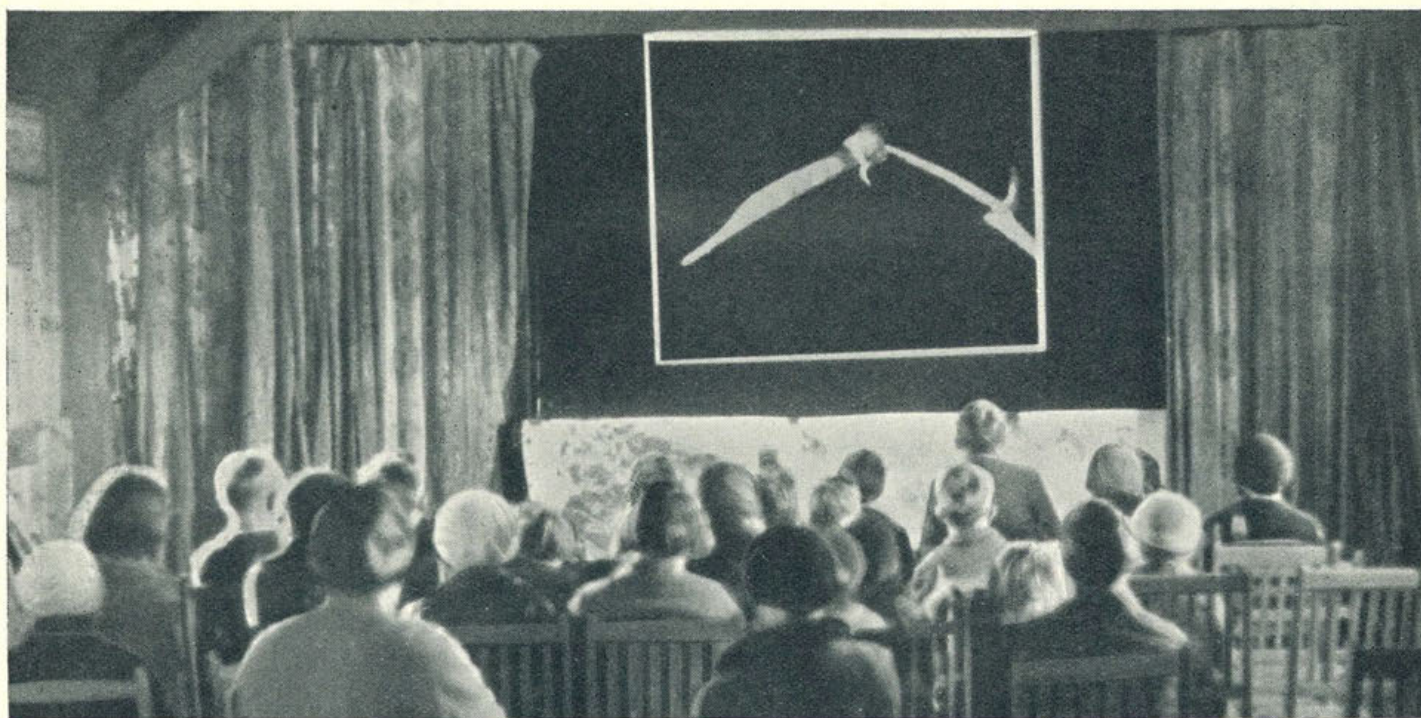
TO travel with a cinema for six weeks, every evening erecting apparatus and showing films, conducting lecture and discussion, exhibiting each night in a different Devon village on a different by-lane—all this means hard work; at the same time our attempt proved an exhilarating and exciting adventure. Our purpose was to explore the value of the cinema in adult education with such an audience as might be found in any small Devon village. Ten of the selected centres had a population of under 500—and we visited two small towns of some 1,100 people.

Money was necessary for this experiment; the cost was about £90. Fifty pounds were given as donations to the Newton Abbot and District Film Society a branch of the Workers' Educational Association, and the rest was raised by charging 6d.

entrance fee for each adult and running a special penny matinée for the children.

Voluntary skilled labour was also necessary, and a carpenter, electrician and typist we were fortunate in finding among our own members. Our carpenter made a barrier to ward off over-inquisitive youths from our machine; around this three police representatives appeared on our opening night after we had shown the films. The inspector leaned on the barrier: it collapsed. Feverishly we erected it: the inspector made no comment, and the village policeman, we noted, held the barrier in his hand behind his back until the officials disappeared.

The first step was to select the best silent and sound films that were available. We were fortunate in securing the goodwill, and experience, and the



CHILDREN AND ADULTS AT A MATINEE OF EDUCATIONAL FILMS. In each village teachers co-operated voluntarily in setting essays and questions on the films, but the only "control" exercised on the children was the interest of the film. (Photograph by Stuart Black)

films of the British Instructional Films Ltd., through their Educational Manager, Miss Locket. Their excellent "Nature" and "Travel" films provided the material for all our exhibitions, with the exception of three films loaned by the Western Electric Company⁽¹⁾. We decided therefore to focus our meetings around this type of film, which had manifest advantages for rural audiences. The "Nature" films established contact with the experience of the villages; while we knew from the returns of the County Library that travel books constituted the largest category of non-fiction books issued.

We arranged a short course of three meetings in each village on "Man and his Environment." On the first evening the central theme was that of individualism as depicted first by a film showing THE BATTLE OF THE PLANTS, then by a second film showing various PAWS AND CLAWS, adapted for specific purposes, and finally by a 15 minute film of life in a Nigerian city. The second evening dealt with the fertilisation of plants, life on an ant hill, and the life of a colonist in Kenya⁽²⁾. "Was this interdependence a form of co-operation or parasitism?" was the main point of the discussion.

- (1) One of our members provided a De Vry Portable Projector for the silent films. The Western Electric Company loaned their sound equipment free for the three weeks, the branch being responsible for transport charges and maintenance costs of the operator.
- (2) This film evoked a certain amount of criticism and good natured laughter from the villagers, who could see no hardship in the colonist's difficulties as represented in the picture.

On the third evening we discussed co-operation in human activity. A film was shown of the opening up of America following the development of transport; another of a transcontinental flight and all the highly skilled co-operation necessary to achieve it, while a third film, A VISIT TO THE COAL FACE raised interesting social problems underlying human activity.

Each exhibition of films was preceded by a short talk upon the theme of the evening. The first film was shown and linked by the tutor to the second film with a brief commentary. This was repeated between the second and third films. These talks were designed to suggest a point of approach to the film: the films were not used merely to illustrate a lecture. We were anxious to explore the teaching value of the film as a medium for conveying information, and as a means of stimulating thought.

After the third film the groups were allowed to select a film for a second exhibition, and while this film was being re-wound the questionnaires upon the film were issued. This was a shock at first, but eventually 650 questionnaires were returned by adults during the six weeks.

We knew that if we were to get the replies from village people it would be futile to expect written answers. We had therefore to use the multiple answer method in various forms or simple diagrams⁽³⁾. In some cases our observers sat by people and

- (3) The following are typical questions:

▽ If this triangle represents Africa, mark with a X the country covered in RAIL AND TRAILS; show with a circle the country of Abyssinia where Ras Tafari was crowned.

The Green Fly has 4, 6, 8, legs: its eggs are green, blue, black. *Strike out the correct answer.*

The fly is found on..... plants.

recorded their replies. "Which of the following things did you see in the film?" read out our observer to an old Devon "handyman," and proceeded to detail a number of things, some of which were, and some of which were not in the film. The man listened, and then, a little offended, replied, "If they were in the film, I saw 'em." He refused to be more definite.

After the questionnaires had been returned to the observers the chosen film was shown for a second time. A general discussion followed upon the theme of the evening, of which verbatim reports were kept.

But, pointed out one rural member of our research committee, all these methods will never reveal what the man in the village is really thinking. He will talk more freely during the subsequent days. Friends in each village were therefore approached and they helped in reporting all informal criticism to us about our programmes and discussions.

The range of our experiment was limited to villages with electric light—in one instance supplied by a private company. Only good luck, and the skill of the operator of the Western Electric Co. got the show through in more than one case. In one instance we were showing a silent feature film on Good Friday—the Indian film *SHIRAZ*. We were working our own De Vry apparatus and the electrician was "off" that night. We began at

FROM KRISS (FILMOPHONE)

Magnificent settings and native rituals with the beauty of real pantomime



FROM KRISS (FILMOPHONE)
Dutch East Indies: all native cast:
a silent film post synchronised

7.30 p.m. To our consternation the film ran in slow motion. In our ignorance we thought the mechanism had failed, but decided to plough on as long as the machine would turn. Camels moved across the desert in slow motion; horses galloped in such a manner as to evoke unfair comparison with our local races. "Eleven o'clock," said the operator, "and two more reels to run." We appealed to the audience to go; they were firm, they wanted *all* the picture. We cut out a reel and closed the machine at 11.30 p.m. The only sign of weariness appeared in the children who, scarcely able to keep their eyes open, read the titles aloud, backed the horses in their canter, and made very realistic "noises off" whenever cattle appeared. We discovered later, when we took the Western

Electric apparatus to the same place, that though the voltage was nominally 230 volts, actually there were only 180 volts along this private line, which slowly rose to 200 volts in the evening. Our apparatus needed 230 volts as a minimum.

We have not yet collated our material, and it would be unwise to evaluate the experiment at this stage. (A full report will be issued in the autumn). This we say, that British Instructional Films, the Western Electric Company, the owner of the De Vry projector, the observers, the police, and the various craftsmen and specialists on the committee, have given of their services without stint. It has certainly proved a magnificent example of co-operation.



NEW METHODS IN TEACHING

THE LANTERN SLIDE IN TEACHING

By A. Clow Ford

GUTENBERG'S mechanical contrivance of movable type made the civilised world book-minded. The invention was inveighed against; its soullessness, as compared with the script of a living hand, was held (especially by those who did not do the writing) to be an enslavement of the human spirit. To-day it is realised that the relief from physical fatigue afforded by movable type has liberated the human spirit as perhaps no other invention has done. And mechanical aids to learning and teaching are multiplying and the same cry goes up daily against them. There is, however, a large proportion of educators who realise that the printed word, with its very indirect appeal to the mind, has its limitations as an instrument for teaching, and that there are other ways of conveying information, arousing interest and stimulating the imagination; and that among these there are many ingenious mechanical devices that save mechanic labour, and increasingly set free the teacher to direct his energy towards the more spiritual aspects of his work.

Among these devices are the optical lantern and the slide, used as a matter of course in most well-equipped teaching institutions; yet in some regarded as a needless luxury, in some even as a distraction from the "real work" of school or college. And many teachers do not know the extent of the facilities that are at their disposal. Lanterns with varying means of illumination have long been on the market at low cost; and the epidiascope has now been made a thoroughly practicable instrument and come down most substantially in price.

But perhaps the part of lantern work that gives most trouble is the slide, or plate, as some prefer to call it to distinguish it from the microscope slide. For occasional work there are available many sources of material; commercial firms of slide-makers have collections running into hundreds of thousands to choose from; many professional associations and societies have very large specialised collections available on loan to members. But the teacher or lecturer who means to make habitual use of the lantern needs to make his own collection to suit his individual conception of the right presentation of his subject.

For different subjects there are different conditions to be considered in the building up of a collection: the humanities such as art, architecture, history, and geography, travel, anthropology as well as the sciences — even to photomicrographs and X-ray work, not to speak of the more obvious applications to botany, zoology, and geology all need somewhat specialised experience, over and above a knowledge of the subject itself, to build up a satisfactory collection; and the present article is to be followed by a number of specialised articles.

But there are some principles of general application that may be stated now. For effective use, in a fairly small institution—say a school of 200-500 pupils—the collection should be centralised, grouped on broad lines, and most carefully numbered in series: for the reason that most illustrations can be used for many purposes, i.e., the teachers of art, history, and geography may all find apt illustration for their respective subjects from the same slide: in selecting any slides for addition to the collection that principle should be kept in mind. Each specialist teacher would therefore scrutinise all slides in the collection and make a card-index for his own use, with a grouping principle to suit his subject and range of classes. He would then know the gaps in his own index, and recourse could be made to the commercial firms or professional societies to hire or borrow.

If the gaps are serious it is cheaper to purchase, unless one is sufficiently skilful to make one's own slides, and this is often not more difficult than developing an ordinary photographic plate. There are many firms that will make slides to order, monochrome or coloured, at a day's notice. And finally a stock of plates should always be kept—they cost but a few pence—on which diagrams or writing can be put at a moment's notice. Thus equipped teachers will find added efficiency in their work, and make their pupils not only book-minded but in addition, picture minded.

To those who are unfamiliar with prices and dealers the following particulars may be useful.

The cost of a plain slide made from a negative supplied by the purchaser is usually 1s. 6d. to 2s.; from a print or picture 2s. 6d. or 3s.; for colouring an extra two or three shillings is charged. More or less the same prices obtain for slides purchased from stock, and good selections can be obtained from such old established firms as Newton & Co., Ltd., 43, Museum Street, W.C.1., from Kodak's, or from Ludgate Circus House, E.C.4. (A. J. G. Seaton). The subjects available include travel-maps and photographs; botany, geology, physiology, industry and architecture.

Slides may be hired at prices varying from 1s. 6d. to 3s. a dozen for one night, these prices being reduced for consecutive nights or for subscriptions; and the Church Army Lantern and Cinema Department provide apparatus for hire from 5s. a night.

Second-hand slides from 6d. plain to 2s. 6d., coloured, can be obtained from W. C. Hughes & Co., of Brewster House, 82, Mortimer Road, Kingsland, N.1. Plates of the standard size (3½ ins. square) for making one's own slides, cost about 2s. a dozen.

BROADCASTING AND THE FILM LANTERN

By Norman M. Johnson

Headmaster of the McLean School, Dunfermline

THE writer of this short note is a complete convert to the use of broadcast talks in school as an aid to learning. Excellent and stimulating as these talks have become, it was felt from the start that some type of visual illustration was necessary, especially in regard to geography; not only to provide a much-needed background for the talks, but also as an aid in the revision of their matter. That the B.B.C. took this point of view is indicated by the provision of illustrated pamphlets and (occasionally) by the suggestion of suitable films. Lantern slides, an epidiascope, or films would have been tried out to secure the aims mentioned, but the lack of electric power in school was felt to be a great difficulty, not to speak of the cost of really efficient types of epidiascopes and film projectors.

Quite by accident the writer learnt of the existence of a lantern described as the Unit Portable Film Lantern, and the possibilities of this were at once explored. This lantern is reasonably priced (£9 5s.) is absurdly simple to use, is illuminated by a special kind of silvered electric lamp worked by an accumulator which fits into the lantern, and uses, not the ordinary glass lantern-slides, but film-slides made into a continuous roll. The size of the picture varies with the distance of the lantern from the screen, but the maximum size for successful projection is 8ft. by 8ft. The roll is turned by a knob, and a given picture may stay on the screen for as long as it is needed: a second knob re-rolls the film at the end of the series.

Both lantern and film-slides are made by Visual Information Service, 168a, Battersea Bridge Road, London, S.W.11., and it should be added that the lantern is as easily carried as a suitcase.

Once it was shown that the lantern could be successfully employed in a classroom fitted with moderately dark blinds, the problem in the first instance was to arrange for film-slides which would adequately illustrate the geography broadcast talks taking place in the current term. Although there is in existence an extensive library of film-slides which may be hired at a cheap rate, it was found that only certain ones could be used for illustration, and therefore rolls were specially prepared by the makers from pictorial material supplied by members of the school staff, and also obtained elsewhere, e.g., magazines. The cost worked out at threepence per picture, including titles, and the results were admirable.

The following summary gives the titles of broadcast talks in geography during the current term (i.e., term III, 1931-1932) and the rolls of film-slides that were used in illustration. A price at the

side indicates the cost where a roll was specially made. The hiring charge of the remainder did not exceed one shilling per week.

	BROADCAST TALKS IN SERIES "EUROPE AND ITS PEOPLES"	TITLE OF ROLL OF FILM-SLIDES	COST (IF SPECIALLY MADE)
1.	The Baltic Lands ..	The Baltic Lands	5s. 3d.
2.	Forestry in Northern Europe ...	Do. (incl. map)	
3.	Russia south of the Forest Belt ..	Russia (incl. maps) ..	
4.	Across Norway from Oslo to the Atlantic ..	Norway ..	5s. 3d.
5.	Across South Sweden ..	Scenes in Sweden ..	9s. 3d.
6.	Fishing in the Northern Atlantic ..	With the East Coast Fishing Fleet ..	
7.	Farming in Denmark ..	In Dairyland (Denmark)	
8.	The Baltic Coast ..	(Material not yet assembled)	

As an example of the combination of the two ideas, Talk No. 5 describes the journey from Gothenburg to Stockholm; the Göta Canal; the great lakes, Wener, Wetter and Malar; a typical farm; crops of hay and rye; and Stockholm—a modern city. The hired roll film showed a journey across Southern Sweden by way of the Göta Canal; harbour and shipping at Gothenburg; Trollhatten Falls and Locks; canal, lake and country scenes; old castle and churches *en route*, and a glimpse of Stockholm.

In regard to classroom technique it was found in practice that the most satisfactory plan was to show the film-slides to the class or classes concerned a day or two before the wireless talk, and to re-exhibit the pictures at a suitable time later on.

Obviously where there is an association, but not a complete unity, of sound and sight it would be inadvisable to attempt to use the film-roll at the same time as the talk. But as to further possibilities it is surely not unreasonable to suggest that a broadcast speaker having a portable lantern in the studio might describe certain pictures in the course of his talk at the same moment as the listening classes, using lantern and duplicate film-slides, saw the actual projection of the same pictures.

This would approximate towards the desire expressed recently by the Rt. Hon. H. A. L. Fisher when he said, "I look forward to a time when broadcasting will be combined with the film . . . in every school in the country."



NORTHERN LIGHTS

From the Film of the Courtald Expedition to the Arctic (Albion). See Film Reviews

PERSONALITY IN EDUCATIONAL FILMS

Captain G. H. T. Higginson, who has recently completed a 16mm. film of the Manchester School of Art, considers that while sub-standard films and apparatus are of great value to schools, "the average library film, and I am speaking of the 16mm. size, is not much use as it is hopelessly antiquated in the majority of cases. Also it is somehow devoid of that personal touch which to my mind is essential. Most professional films are.

"I would far rather see an educational film where the personal touch is a little more in evidence than one that is highly finished technically. There is something cold about some of these professional interest films. I think somehow that schools themselves will have to turn out the necessary educational films that they require. They would be in the best position to judge what material is wanted. Naturally the man behind the camera should have a good knowledge of his subject so as to be able to photograph it to the best advantage. It is useless asking someone to take an educational film of, say, a cotton mill when he does not know

the simplest facts about it. The field is large and its limits are endless."

The main purpose of Captain Higginson's film of the Manchester School of Art was to enlighten the public (primarily the parents of students) as to the work carried out at an art school. Captain Higginson wrote the scenario and "shot" the film, the whole production taking from three to four months. The running time of the film is 50 minutes, and about 48 different subjects are illustrated.



Students at the Manchester School of Art (G. H. T. Higginson)

AMATEUR FILM PRODUCTION

POWER

By W. B. McKenna,

Cambridge University Cinema Society

BY the middle of July the first educational picture of the Cambridge University Cinema Society should be completed. Only six months ago the Society, originally founded in 1928, came to life after lying almost dormant for two years, and secured club-rooms and a studio; even before it had become established in its new premises it had determined to undertake the production of a film that should be at once of both educational and general interest. The University, with its wealth of facilities for such a picture, was at hand; among the members of the club were many young men interested in the art and industry of the cinema— young men of ideas and energy. Before long *POWER* (as the film is tentatively titled) was under production.

The title of the picture indicates its general nature. When the script came to be written it was felt that to treat such a vast subject in any arbitrary manner, to submit it, for example, to the restrictions of chronological order, would preclude any possibility of its being a cinematographic success, and would not make it any the more instructive. Hence it was decided to divide the picture into three general sections, the first to deal with power in its unharnessed state, the second with man's attempts, both in ancient and modern times, to harness power, and the third with power as it is used to-day.

The four elemental kinds of power, wind, water, gravitation and beast, are depicted in the first part of this film, which is comparatively short. The shots which make up the second section survey concisely man's attempts to subjugate these elemental forces and to apply his own energy. No use of chronological order has been made here. Rather, the picture shows that, while man began to tame nature centuries ago, and while he has since made elaborate developments on his early efforts, nevertheless hammers and axes, his first tools and weapons, are still in use to-day. The third section of *POWER* is made up of shots indicating the many ways in which natural energy is now applied, in common household appliances, in locomotives, in aero engines, in racing cars. In making this part of the picture, the cooperation of the staff of the Cambridge engineering laboratories was invaluable.

The direction of the picture was put in the hands of Gordon Taylor, an undergraduate of Trinity College who had been connected with the production last year of the one-reel interest film *CAMBRIDGE*. From a number of suggestions submitted by members of the Society Taylor selected one and upon it based his treatment and script. He has not been content with making the picture noteworthy in an educational way, but has also attempted to achieve a

Shooting a scene for *POWER*

high standard of photography and to put to good use the usual technique of the cinema. His task has not been an easy one. At present the Society possesses the bare minimum of equipment—a few lights and a camera—and its studio is very small. In addition, the funds at Taylor's disposal have been decidedly limited: he has spent approximately £100, some of which went for the services of a professional camera man. Most of the actors were recruited from members of the Society, though in taking shots of certain machines and apparatus, the persons normally in charge of their operation were included in the picture; in other cases farm-hands were photographed driving carts or chopping logs.

From an educational point of view the value of this film lies in that it is a very general survey of a vast subject; no special emphasis is laid on any particular development, but all developments are suggested. It is the intention of the director that the picture shall stimulate in the spectator interest in one or more of the uses of power shown, not that it will give him detailed information about any one of them. Two different running commentaries will be prepared for accompanying the finished picture, one to be moderately technical in tone for use in schools, and the other more popular and less scientific, for general distribution. These running commentaries will supplement the film itself, as the director has deliberately made the film so that it can be projected silently, and the ordinary close-up shot has been used throughout in order that the picture may be shown on small screens without appreciable loss of effect.

THE ARTIST AND THE TEACHER

THEIR FUNCTION IN THE MAKING OF AN INSTRUCTIONAL FILM

By John Grierson

In the following reply to Mr. Ronald Gow's article which appeared in the last issue of SIGHT AND SOUND Mr. John Grierson, of the Empire Marketing Board Film Unit, draws a distinction between foreground and background educational films

RONALD GOW has done a real service to educational film criticism in his article on Teaching Films. You will remember that in the last issue of SIGHT AND SOUND he asked that educational films should be really educational: something more than the "superannuated scenic or interest films" which are now so often passed off as educational by the opportunists of the lay world. He called for teaching films which will not only teach but make specific contributions to specific lessons. An essential point in his argument was that the production of these teaching films was a job for teachers. Teachers, clearly, are the only people who can determine the exact part a film strip is to play in the lesson.

To fill out his case, however, Gow took the example of CONQUEST, and thereby hauled me into the argument. This film of mine, he maintained, was just the sort of thing which was not a teaching film. "Grierson has made the mistake of supposing that the teaching of geography to children needs the same technique as teaching a five year plan to Russian peasants . . . To hear an audience of school-boys moved to frenzy by the 'power' motif of CONQUEST is to know the real power of cinema, but the balance of education is likely to be upset . . . It may be magnificent but it is too definitely War-dour Street."

I want to assure Gow that I have made no mistake, or at least have not made the mistake he attributes to me. I feel just as strongly as he does about teaching films and the very definite limits within which they should be used in the classroom. My sufficient answer to him is that CONQUEST was not made for the classroom, and does not pretend to be a lesson in geography. I made it as a *background* educational film, which is another thing altogether.

We should, I think, be clear on this distinction. Where actual teaching is involved you are primarily exercising the child mind in the processes of analysis; and cinema must be regarded as simply one visual aid among others to the teacher in his work. One or two things it can do better than the blackboard and the wall map and the lantern slide: in several respects it is inferior to these instruments. Indeed, almost its only virtue in the classroom is its power to describe certain things better than the teacher can hope to do. If, for example, a teacher is trying to describe 'prairie' to children who have seen nothing larger than a three acre field, the film can, at that particular point of the lesson, help him. It can bring a prairie into perceptive experience, as no effort in imaginative

teaching can expect to do. One imagines that at such points in the lesson the teacher will leave off from his teaching, press the projector button, and run a film strip descriptive of the matter in hand: proceeding thereafter to the usual pedagogic demonstration of the points involved.

My personal opinion is that the film in the classroom should be no more pretentious in its claim than this. It cannot do the teacher's job for him, because it can neither command the different mental speeds of the children nor compete with the teacher in his intimate point-to-point emphasis. It is a describer, and a good one, with special command over moving diagram and over the speeding-up and slowing-down of movements and processes; but it is nothing more.

The choice of the descriptive strips to be used in the different lessons of geography, history and other appropriate subjects is, of course, for the educationalists in the different areas and the different curricular to decide. I have myself recently started production on teaching films, all of which have been made under such practical guidance. I may say that I am content with none of them so far. They all try too much: either they include teaching points the teacher could make for himself, or they include diagrams the blackboard could do equally well or, in their description, give more detail than is necessary to help the teacher to his conclusions. So doing, they break into the teacher's function and distract the course of the lesson.

My future intention is to base the teaching film on the descriptive capacity of the film, and on that only. Recently a London teacher saw some of my 'rushes,' made for a theatrical film on craftsmanship. The rushes were a straight series of exteriors taken in the Black Country: of smoking chimneys, dirty streets, blast furnaces, pottery kilns and so forth. The shots came straight out of the camera and succeeded each other without any attempt at dramatic or expositional sequence. Yet the London teacher maintained that this rough strip was the only completely satisfactory teaching film he had seen. "I can do the teaching myself," he told me: "teach the economics of the Black Country, tell pupils the why and wherefore of the potteries and blast furnaces. That is my job. What I cannot convey to them is what the Black Country is like, and this sort of thing will do it for me." I am going to take his word for it and confine myself to straight sequences telling children what something or other is like. I shall expect

THE BLACK COUNTRY

FROM A FILM ON
CRAFTSMANSHIP
BY
JOHN GRIERSON



This picture is taken from a rough strip of straight shots of the Black Country. A London teacher said of these shots: "I can do the teaching myself . . . That is my job. What I cannot do is convey to them what the Black Country is like, and this sort of thing will do it for me"

teachers to send me long lists of the things they want descriptions for: that is to say in as much as they touch the economic geography of the Empire.

But apart altogether from this cold-blooded business of sheer instruction, there is another place for the film in education. Every educational course does at one point or another, or in one way or another, try to give some imaginal training. You may conceive of this in terms of a training in general knowledge or, in larger fashion still, in terms of a training in outlook or a training in character. This ideological question is, I know, a dangerous one to raise among educationalists; but the deeper educational attempt is certainly always present. CONQUEST was intended for this field of activity. I did not try to teach the facts or dates of American economic history. I tried to interpret the story of the prairie as a series of invasions and as a continuing demonstration of the fact that man's power in the world depends on the power of his weapons. What I was after was to demonstrate that the railway train and modern machinery represented invasions

just as important, just as exciting, and just as historically significant, as the invasion of the white men in the covered wagons into Red Indian territory.

I wanted children to feel that the world to-day, with its wheat fields and tractors, was also part of history and also, possibly, a field for their romantic attention.

This film I meant not for the classroom but for the school hall or the local theatre. I can only now conceive of it being shown to large groups of children as a most general preparation for, or supplement to, the geography and history lessons. Films of this sort, if sufficiently good, sufficiently pointed in their romanticising or dramatising of a subject, are bound to increase the child's attention to his classroom work.

So I do not take Gow too seriously when he tells me I am no classroom teacher. What is really important is that any producer, by appreciating the distinction between the pure *pedagogic* job and the other imaginal job, can hope to be an educator too.

Gow was kind enough to call me an artist. With so much of the world to bring into the imagination of each new generation; with so many of its virtues in work and research and organisation and achievement to tell the generation which will fall heir to its problems, I cannot believe that the interpretative functions of the artist and the educator are mutually exclusive.

MAKING THE DOCUMENTARY FILM

By Andrew Buchanan

Author of "The Way of the Cinema": Producer and Editor of the Ideal Sound Cinemagazine

Mr. Buchanan, who has perfected a new form of film journalism, describes in the following article some of the work and organisation which goes to the making of a film magazine

IF one eliminates the story of life is there not bound to be what is known in the film industry as a "shortage of plots"?

Even a wholesale adaptation of plays and novels has not met the demand, and yet no real advantage has been taken of the stories and backgrounds offered by the world. Instead, studios are packed to suffocation by units busily engaged on creating an artificial world, building up anything from a Chinese bazaar to a Devonshire lane. It would seem that as time passes, fewer and fewer actual exteriors are included, thereby establishing a tradition that unless scenes are built in studios they are of no value. Climatic conditions may have a great deal to do with this, but not everything, and the result is that the real strength and beauty of the film is in danger of being forgotten. It has become a poor imprisoned thing, blinded by the artificial sun of the studio, lying manacled by coils of sound track, and entirely at the mercy of the governor of the prison, the microphone.

But for the documentary and interest film, life would be excluded from the screen—that is, real life, showing the peoples of the world in their natural surroundings. It has been left to the documentary to show these, and it appears to be thought that only in non-dramatic and industrial films should such glimpses be seen. This is good for the documentary but bad for the feature film, which, it is hoped, will ultimately escape from the studio and capture dramas and comedies enacted in natural settings. By this means every film would contain an element of the documentary picture by reason of the backgrounds included, which, though secondary to the dramatic motive, would show how life is lived and work is done.

Those engaged on the production of a commercial documentary film—that is, a series released weekly, have the task of producing more than 52,000 feet annually. Each reel is approximately 1,000 feet in length, and is usually composed of five separate sequences. Therefore, nearly 300 "stories" have to be secured for a year's output. This is the work of a research department consisting of several specialists, who divide the activities of the world into various groups. One may concentrate on industrial subjects, while another will spend his time in a most agreeable way by touring over the country, or perhaps the world, noting its most beautiful, quaint and historic corners. Yet another will concern himself with all branches of sport, fashion and curious pastimes. These

men feed a production schedule which has to be kept fully booked to supply the large footage which a weekly reel consumes. Cameramen work entirely by the schedule, and know their work for several weeks ahead. I might add here that a documentary film has little in common with a news reel, save that both are one-reelers. A news-reel consists of topical matter which must be taken, irrespective of weather conditions, whereas the documentary is not concerned with current events, and includes only those subjects which reach a high standard of photography and production value. The research department would ignore the Derby, but would make a subject out of the training of racehorses, including with it a leisurely survey of the stables and surrounding country. The documentary cameraman is always accompanied by a producer, for the best results are only obtainable when the former is free to concentrate on his apparatus, while another mind is building up the story, undisturbed by technical matters.

Armed with a brief scenario which is supplied by the research department this unit visits the scene of action. If it is an industrial subject, portable incandescent lights will have preceded the unit, and have been connected, either to the main, or to a generator parked outside. Unless entire factories are to be illuminated, three or four lamps are adequate for showing separate shots of each process. The film is shot according to conditions of the location, which invariably means that the scenes are not taken in their correct order. This is not, however, a disadvantage, as the cutter would, in any case, separate every scene before finally assembling. Each scene is numbered and comparatively easy to put in its place. In a similar way exteriors are taken, without, of course, lights, and both these and the industrial jobs are taken "silent," for a reason which I will discuss finally. Actual talking sequences, showing, for instance, notabilities in their homes, or artists describing their processes, are taken either in the studio, or genuinely in the places where these people live; in the latter case with the aid of a sound truck, which contains a portable sound recording apparatus.

In this manner a constant supply of material reaches the editor, who keeps a library of films, from which he makes his selection for the weekly release. It is then that the "cutting" begins, a process which involves far more than the word implies. When an industrial subject arrives, it is

probably about 600 feet in length, and has to be condensed into 200. In addition, each shot has to be "dramatised," and infused with rhythm. To create this tempo, each shot is studied separately, joined to the next one and so on until the film is complete in its original length. This is viewed, and the result is a slow moving version of the industry. Now a mechanical process is repetition, and all mechanical processes in a factory are simultaneous. That is, therefore, the effect to be created. Accordingly the shots are measured and, perhaps, halved. The halves are joined, leaving a valuable balance over. To obtain the simultaneous effect they are reinserted again and again between subsequent processes, until the spectator clearly feels the entire process going on around him. Faster and faster each shot follows the other, then back again to the first process, each sequence carrying the industry a stage nearer the final one. That is, briefly, the basis of cutting a film, an art which is becoming increasingly important in this country.

I spoke of dramatising industry. This does not mean falsifying it. On the contrary, it results in processes becoming simpler to understand, and, with

the addition of a musical accompaniment, infinitely more appealing than a long and too exact pictorial account of any particular manufacturing process. There is no reason why a documentary film should not be highly entertaining, and if a canning factory can be made to possess an emotional appeal so much the better. One last important point. Most documentary material is shot silent, and post-synchronised with effects, commentary and music; the reason being that it is not possible to record the terrific din in most factories, and if it were, the commentator's voice would be drowned. Similarly, historical and beautiful parts of the world have no sound to record, save, perhaps, tumbling waters or wind rushing through trees, which can be more conveniently added in the process of post synchronising.

However, the value of taking documentary material without sound is that it enables the cameras to shoot freely, and the cutters to be unhampered by the restrictions imposed by sound tracks. It is for this reason that the fundamental basis of film construction, which is movement, is fully applied in the making of the documentary picture, which gives it an enormous advantage over the conventional talking film which is governed by human speech.

KAMERADSCHAFT (PABST)

A scene from the famous
Franco-German mining film





PUBLICITY BY FILM

AN OPEN AIR
PICTURE SHOW

"No amount of custom can stale the fascination of the moving screen."

An interested crowd gather round one of the Conservative Party's open air cinema vans

POLITICS AND THE FILM

THE chief task of political propaganda under a party system is not so much to state a case to an impartial public or even to win over a hostile one, but the much more arduous and thankless business of making up the minds of the indifferent. Under a dictatorship the machinery of political propaganda can be used exclusively to educate the public on the lines of rational policy, but although a certain amount of political education is being carried out by modern methods in this country its main purpose is of necessity the collection of votes.

The majority of people in this country are not interested in politics; a smaller majority, but still a majority, is not interested in general ideas or even in facts if they interest the community rather than the individual. To "get over" an idea to the public it is at first necessary to give it a personal and particular significance; in bringing voters to the polling station it is the personality of the candidate and not his policy that will be found the most effective stimulus.

The parliamentary agent on the eve of an election is chiefly concerned in presenting his candidate to as wide a section of his constituency as he can cover in the time available, and in presenting him as frequently and as effectively as possible. Here the film has proved a valuable aid; at a recent by-election the Conservative Films Association made a short picture (silent, for the sake of economy) of the National candidate at home with his family, and used it successfully to introduce him to a large constituency where he was unknown.

As an attraction for an indifferent public the film representation has certain advantages over the real thing, because of its association with a favourite entertainment. The sight of a demonstration van with its screen and loud-speaker implies a free show and is much more likely to collect interested spectators than a man on a platform. If one stops to listen to him he may ask questions and expect answers, but "the pictures" make no demands on

their audience—one can just look and listen and come away when the show is over. No amount of custom can stale the fascination of the moving screen. At the first flicker a curious group of people will gather; the loud speaker attracts newcomers from further afield, and soon a crowd has collected and the hardest part of the propagandist's task is done.

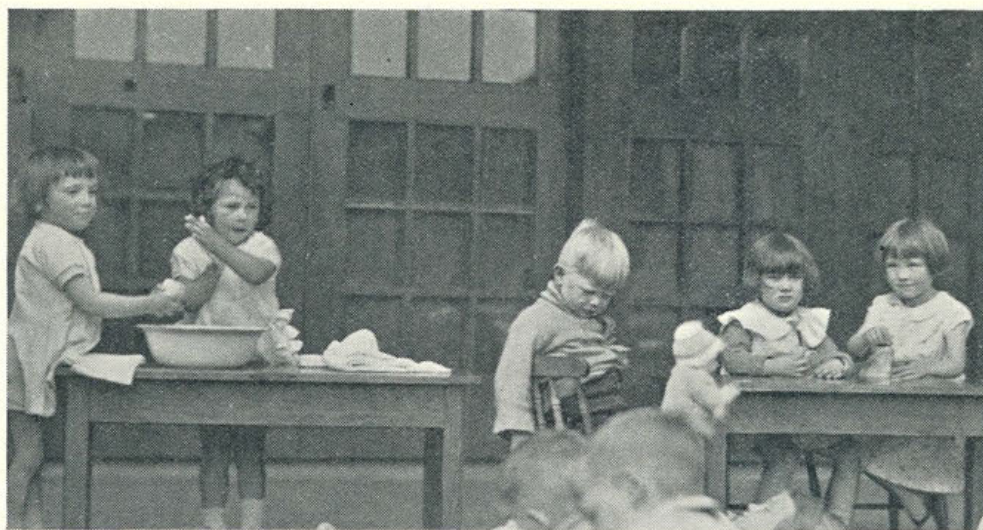
Of the convincing power of the film there can be no doubt. An address about tariffs might conceivably interest one in a hundred of an audience of voters: not one in a thousand would read an article on the subject in their newspaper; but show that same group of people a film illustrating, for instance, the development of the home market garden industry and vast numbers of men unemployed as the result of foreign dumping, and there will be scarcely one who will not carry away some vivid picture that they will associate with the idea of tariffs and the advisability of voting for Mr. X, who stands for protection. With their own eyes they have seen the tomatoes growing. Most English people have a healthy scepticism of political speeches, printed or spoken, but the old saying about the truthfulness of the camera still carries weight.

The Conservative Party's film department have produced, under professional direction, a number of propaganda pictures of this kind. They are usually on a silent basis with a spoken commentary added to the film, real talking film being used for the reproduction of speeches by party leaders. Stanley Baldwin, Ramsay MacDonald and Neville Chamberlain have made "talkies," and among the films used in the last general election campaign was a fifteen minute sequence showing George Arliss as Disraeli delivering two of his famous speeches for the Conservative Party.

These pictures are on standard size film and can be shown either by means of indoor portable projectors at village halls or out of doors from a daylight screen on the back of a demonstration van. During

NEW TEACHING METHODS ON THE SCREEN

From Mr. Stuart Legg's one reel picture of the Chesterfield education scheme. The film will be available for public exhibition, and will probably be synchronised



the recent election the Conservative Party owned ten daylight cinema vans, and borrowed others employing a staff of sixteen operators.

The equipment of this small but extremely keen and efficient unit could scarcely be more compact. The vans are 23 h.p. Thornycroft cars with a specially designed body, and are operated by one man, who combines the functions of driver and showman. The engine is used to drive the D.C. dynamo which supplies the light and power for projection, while the car is stationary. The back of the van opens to form a large platform with side wings to shade the screen, so that a clear picture, visible to a large audience, can be shown even in bright sunlight. The screen itself slides into a special compartment in the roof when not in use. Kalee projectors are used, with Kalee Mirror Arcs, and the sound system consists of a B.T.P. soundhead followed by a two stage head amplifier and three stage main amplifier with a dissipation of 60 watts. The amplifier and exciter lamp are fed from a 220 A.C. supply generated by a convertor. A folded exponential horn is fitted to the roof with a moving coil unit energised from the D.C. supply available, and for the benefit of the people crowding round the platform there are mains energised R.K. moving coil speakers mounted on a baffle underneath the screen. These also act as guides to the operator.

When silent films are being shown a musical accompaniment is provided by a twin turn-table unit fitted with two A.C. synchronous motors and a "fader." Besides this equipment there are exhaust and intake fans for interior ventilation; the exhaust fumes from the engine are carried up to the roof in front of the car, out of the way of the audience, and there is ample space inside the van not only for the operator, but for spares locker, a re-winder and a supply of films.

The whole of this equipment has now been taken over by British Films Limited, who have been using this fleet of talking picture vans for a series of useful publicity tours, among others for the National Milk Publicity Council, the Corporation of Yarmouth, and for the Ministry of Agriculture, which has recently organised an advertisement campaign for the National Mark. Y.M.R.

MODERN EDUCATION ON THE SCREEN

Mr. Stuart Legg, who directed *ENGLAND AWAKE* has just finished "shooting" a film record of the new education system now in force at the Chesterfield Borough Schools. Under this system which is based on the Hadow Report of 1926, each child receives a primary education from the ages of three to eleven. At eleven there is an examination, according to the results of which each child receives an advanced education suited to its aptitudes and capabilities. Those who are suited for bookwork go on to the selective academic school; those suited for more practical work go on to the modern schools, where a practical bias holds. At the age of fourteen or fifteen every child is interviewed by a Ministry of Labour official and asked what kind of work he or she wants to do. The main industries of the town, into which most of the children find their way, are engineering, mining, pottery; from the selective academic school, the children go into almost any black-coated occupation, clerks, civil servants, business, etc. The girls become secretaries, typists, teachers, domestic servants and factory hands.

"The purpose for which the film was made," says Mr. Legg, "was to put on record by means of a documentary film, one of the most complete modern systems of education at present existing in England. The idea of the film came from Mr. W. H. George, an assistant master at the William Rhodes Modern School, Chesterfield, and he has superintended the production. The Chief Education Officer, Dr. H. G. Stread, gave his whole-hearted support to the scheme. The film was shot in Chesterfield between May 12th and June 11th. Some activity of nearly every school in the Borough was included, as well as the industrial and town life of the district. The weather was extremely bad most of the time, and in the end, in spite of extremely well-lit and airy class-rooms we had to have lights down from London to shoot the interiors. The cameraman was Mr. G. F. Gibbs, of Stolls, Cricklewood. An outdoor set was used for a few scenes, but the great majority were taken in and about the schools and the town, and a good many with concealed cameras.

THE GRAMOPHONE AS A MUSICAL AID

By T. L. MacDONALD

We should frankly recognise the limitations of the gramophone in music study, says Mr. MacDonald, and recognise the special technique which is required to handle it with the best results

IT is the gravest danger of educational enthusiasms to recognise no boundaries. In the case of an aid so definitely valuable as the gramophone, the risk of doing this disservice is the greater, the damage that may be done also greater.

Warnings about the gramophone are usually with reference to the supposititious decline of genuine individual music-making. There is a more fundamental one which does not usually appear to be stated correctly. That is, that listening to the gramophone must be learnt just as much as any other kind of listening. Repeated experiments with speech records, in some cases with language records of an elementary type in much more advanced adult classes, have suggested to me that there is a process of habituation needed even to the very best of reproduction. It is well known that there is a slight amount of instrumental noise which is definitely inevitable in the sense that it can only be cut out at the expense of also affecting the reproduction to a very slight extent. When the gramophone is properly used this undercurrent is not now such as to obscure the reproduction of delicate effects. With most people it simply ceases to be noticed after a very short time, though I have come across occasional persons with whom the residual sound accompanying reproduction acted as persistent distraction. But quite apart from this sound, there is a psychological habituation necessary to effective gramophone listening. This again is partly due to the fact that the volume actually produced is very seldom identical with the volume produced by the original instruments. The habitué listens in a small room to a stage performance or platform singer without the slightest consciousness that the actual volume of sound is a fraction of that produced in the original performance. The orchestral record usually gives the effect of moderate and well-balanced distance from each instrument along with the volume at a very much greater distance. The effect produced by such a record may actually be nearer to the effect intended by the original score than anyone has ever heard in the concert hall; a point which, I think, has not usually been brought in favour of recorded music! In brief, the reproduction in a particular space, such as a class room, of sounds which (in many cases) never could be produced in the same space, and, it should be remembered, bearing on the shellac the colouring of the acoustic chamber in which they were originally produced—this reproduction business itself requires some sort of training.

The second point to which I want to draw attention is the need for training and practice in playing the gramophone. I can quite believe that this may sound to some like a bad joke; you turn a handle, or you plug into the mains, you change the needle, and the record does the rest . . . with results which we have all heard! There is an increasing amount of genuine technique about the correct operation of the gramophone, which teachers should have acquired before using the instrument as an aid in class. There is the question of the correct placing of the gramophone, usually a matter of securing the least distortion in all parts of a room not originally constructed for acoustic qualities. There is the correct levelling of the machine, so that the needle shall enter the grooves correctly (which affects wear as well as reproduction). There is the adjustment of the speed; and the occasional necessity of altering the speed slightly for certain types of record (occasionally without printed warning on the label). There are precautions to be taken against record "swing" (central hole not concentric with the sound spiral), against warping, and other such matters. There is the proper selection of needles—and it is foolish to have only one type of needle available. There are precautions to be taken to have the records kept reasonably clean, and to attend to wear whenever possible—for example to prevent clogging when non-metallic needles are used. This is not the place in which to discuss such matters. Competent preliminary guidance can readily be obtained from such books as *Gramophones, Acoustic and Radio* (which is as I write on the point of publication by the Gramophone Magazine).

If only it is treated like any other musical instrument, the teaching capacity of the gramophone is pretty well unlimited, and to a considerable extent unexplored. The most obvious uses are in teaching all the aspects of what we now call musical appreciation, in providing technical examples to students of any particular instrument, in supplying accompaniments, and in rendering possible an intelligent study of musical history and of regional schools of music. But in all these fields its superiority over radio lies in repetition, while it has the virtue of leaving the teacher free to teach. There will always be a great deal which the teacher will illustrate by voice or on an instrument; but for the repeated performance of the greater part of the illustrative music required, some such mechanism as the gramophone will be indispensable. Someone remarked that even though many of us can play the piano in some sort of way,

very few of us can "play the orchestra"! The selection of records will be guided mainly by the syllabus to be taught. The principal companies issue special educational catalogues from which a great deal of really useful information is to be obtained. A set of pamphlets put out by His Master's Voice under the general title of "The Gramophone in School" contains much material of general application.

RECORD PROGRESS IN 1932

Recent developments of the gramophone industry are especially notable for the number of valuable records which are not issued to dealers as a whole. The output of the larger companies has for a long time been much too large to be stocked by all shops; and one supposes that current depression has something to do with the extension of special issues.

Subscription Records

A very interesting innovation is the establishment through the H.M.V. organisation of societies for recording the works of individual composers in limited editions. The first of these is recording the songs of Hugo Wolf; the lists are closed and the records issued for the present year. The second, the Beethoven Sonata Society, closes its lists at the end of June, and a third, the Haydn Quartet Society, at the end of August. As the records are not to be issued to the public at all, schools and institutions which are able to keep a proper record library should consider the advisability of participating. The subscription is usually two guineas.

H.M.V. Connoisseur Catalogue

"His Master's Voice" Connoisseur Catalogue, of which a second, enlarged, edition has appeared, consists entirely of records of serious music which have not been issued in the ordinary way. It is a mine of records of educational interest, and includes many important works which have had to be imported until now.

Decca-Polydor

The other really important development is the general issue of Polydor records by the Decca Company. A couple of years ago, the German Polydor company were ahead of the world in some fields, especially piano recording. Their records are even now in the very first rank. Three considerable lists have been issued as I write; a descriptive booklet on each issue may be had from the company for threepence. The Polydor abridged operas include spoken sections, which represent the most natural German talking I know of on records and should be of interest to advanced, especially adult, classes. The Brailowsky piano records should be heard.

H.M.V. Language Records

H.M.V. has just issued a Language Study catalogue. I cannot deal with this in detail until later; meantime hear the "Tales and Dialogues" (same text available in French, German, Italian, Spanish; remarkably clear and forward recording). New Spanish and German courses also appear. T.L.M.

THE GRAMOPHONE IN SCHOOLS

By T. Wall, M.C.

Chief Inspector, West Ham Education Committee

IN an up to date school a gramophone is a necessity, for school music is now not merely singing. Frequently education committees cannot supply the instruments, but supply folk dance records to those schools which have helped themselves, for this saves provision of piano music. Sometimes musical appreciation records are also supplied, and there is an increasing number of authorities in which exist loan collections of records.

Suitable portable machines, with the discount for educational purposes, can be bought for £4 9s. 3d., so that no school need really be without a good machine. It is strongly urged that a cheap, or "coupon" machine will not do.

A gramophone has many advantages over wireless in schools. For one thing, the same piece can be repeated and with each repetition more is understood. Admiration grows as knowledge grows and the keener the perception and the more sympathetic the judgment, the fuller and more enduring will be the pleasure.

The following kinds of records are available for use in schools:—records of speech and languages, marches, dances of all types, records showing examples of correct solo and choir singing, "learning to listen" or musical appreciation records, and records for use in preparing for concerts. In this connection it should be noted that Columbia and H.M.V. have a joint Educational Department which produces helpful pamphlets and is always ready to give advice and lectures to schools.

Speech records are of recent development. There are many good examples of poetry and prose spoken by Drinkwater, Henry Ainley, Forbes-Robertson and others. French and other languages are now well catered for; some records, like the Findlay Gregg records use children's voices and introduce music. Modern commercial schools, too, use records for teaching rhythm for typewriting, and the Gregg records and the more recent Pitman records are most useful. Records by children have been also made to show good examples of singing (tone, breathing and phrasing), and a few children's choirs have been recorded. The companies are alive and enterprising to the needs of infants' schools and have produced a fine set of nursery rhymes and music for singing games, dancing and most recently for percussion games.

For musical appreciation records and pictures of the individual instruments can be used, and a graded scheme of records developed on that foundation.

In West Ham, twelve gramophone concerts have been given to 20,000 children during the past season in school hours by the finest orchestras possible. Before the concerts each child attended a preparatory gramophone lecture on the music by the chief inspector, and after the concerts records of the music were supplied to schools in order that the music might be studied in detail.

FILM TECHNIQUE AND EDUCATION

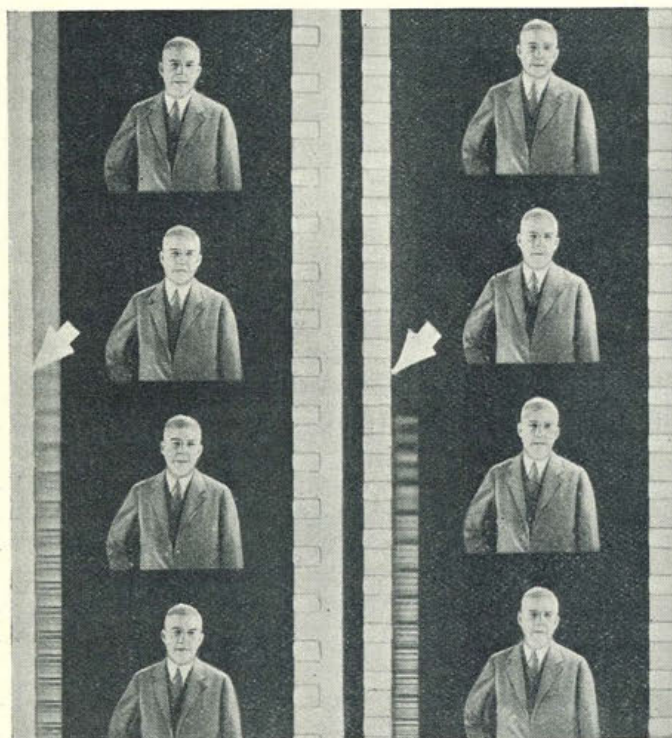
By Eric P. L. Pelly

Director in charge of the Industrial and Educational Department of
Western Electric Company, Ltd.

THE addition of sound to the silent motion picture has enlarged the scope of the film as an educational medium even more than it has done as a means of entertainment; for the purpose of this article, therefore, it is proposed to review only those developments which date from the advent of the sound film.

The immediate popularity which was accorded to the talking picture when it first made a general public appearance in 1929 necessitated that most of the initial films should merely be adapted versions of films originally designed for showing without sound. The addition of sound to these films usually meant little more than the substitution of a spoken commentary for titles. Music was superimposed principally to hide deficiencies in the quality of the sound, resulting mainly from poor technique in early recording. The quality of reproduction then commercially obtainable from reproducing apparatus installed in cinemas was little inferior to that which is generally obtained to-day and the need for progress was, and has been until very recently, mainly in the direction of improving recording technique.

It soon became evident that although adaptations of silent film technique would satisfy the public's appetite while the sound film was a novelty, the real field for the sound film lay in creating as perfect an illusion of reality as possible. Technically this task provided the equipment makers and studio technicians with the problem of extending the range of frequencies (pitch) of sound which could be faithfully recorded and reproduced, to a point where the reproduced sound would be indistinguishable from the original. The human ear can hear sounds having a frequency range from fifty cycles per second to ten thousand cycles per second. The old-fashioned gramophone produced only the middle band of these frequencies and eliminated the high notes and the low notes. All voices sounded more or less alike, and all had that quality of "tinniness" which has unfortunately become associated with mechanical sound. Perhaps only those who have been connected with the development of the telephone, the gramophone and the talking picture can realise the strides which have been made towards the objective of perfect realism, and the immense amount of thought, energy and money which have been expended in research and experiment.



NOISELESS RECORDING

The film strip on the left shows sound recorded on film by the old method, and the right hand strip by the use of noiseless recording. In each case a period of silence ends at the point indicated by the arrow. The sound track is almost opaque for silent periods in noiseless recording

Sound on Disc

At first all recording was done on wax discs. By this method short sequences of sound, recorded on discs synchronously with the taking of scenes, are electrically transferred to other discs of sufficiently long playing time to accompany a standard reel of film. The technique of recording was then based on that used by the gramophone companies, and needed improvement to meet the needs of a situation where the microphone must pick up sounds from varying distances and where the sound, in reproduction, was to stand amplification to a volume sufficient to fill large theatres.

Sound on Film

Concurrently with research directed towards perfecting the recording of sound on discs, a system was developed whereby the sound was recorded photographically on the side of the film itself. The sound record then needed subsequently to be reproduced by means of delicate and expensive optical devices using photo-electric cells. It had already been found that in order to secure the finest possible quality the reproducing apparatus installed in cinemas needed maintenance by highly skilled personnel, and the advent of the "sound-on-film" method with its minute electric currents and delicate and short-lived apparatus reinforced this

need. However, money was pouring into thousands of cinema box offices and expense was no object where quality of sound was concerned. There was created all over the world a vast army of highly trained technicians engaged in periodical inspection and adjustment of the apparatus installed now in over thirty thousand cinemas.

Even with all this skilled organisation, it is only latterly that the average quality actually obtained under working conditions in the cinemas from sound records on the film has approached that obtained from disc records. The art of recording sound on discs was comparatively well known at the start, from its use for gramophone purposes, and the engineers responsible for the development of the two methods have been neck-and-neck all the time in the race for better quality.

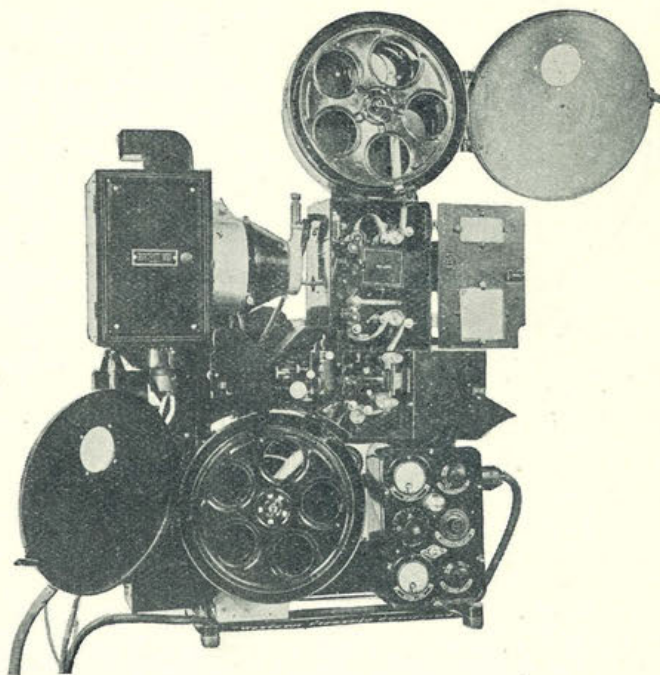
The Two Methods Compared

It would be rash indeed to say which method will eventually supersede the other for theatrical purposes. In the cinemas, the "sound-on-film" method is now nearly universal and is reasonably satisfactory owing to the comparative unimportance of the expense involved in skilled maintenance. Even for theatrical purposes, however, there are now signs of its being superseded in the United States, where great advances have recently taken place in improving the quality of disc-recording and in the reproducing of sound from new smaller, unbreakable, long-wearing discs. In the educational use of films the disc method is destined to return, because of its advantages in low maintenance cost, less variable quality, increased life of films and ease of operation by unskilled persons; for everyone is familiar with the operation of a gramophone.

To those who have watched the development of the recording and reproduction of sound, this race between the groups of engineers responsible for improving the two methods of recording has been full of interest. The situation is, however, particularly interesting at present, because of two very recent developments which have at last so improved the quality of recorded sound as to tax the capabilities of available reproducing apparatus. The first of these, now in fairly general use, is the "noiseless" method of recording on film and the second is the "vertical" or "hill and dale" method of recording on discs, which is only now coming into use in the more progressive studios.

"Noiseless" Recording

The "noiseless" method of recording on film, viewed technically, has been simply a means of eliminating from the sound record all extraneous noise, the equivalent of the "scratch" with which the older gramophone records made us painfully familiar. Artistically, however, this development has represented a very great advance in that it has made possible the use of silence as a contrast to sound without the audience being reminded by mechanical noises of the deception practised upon them by the



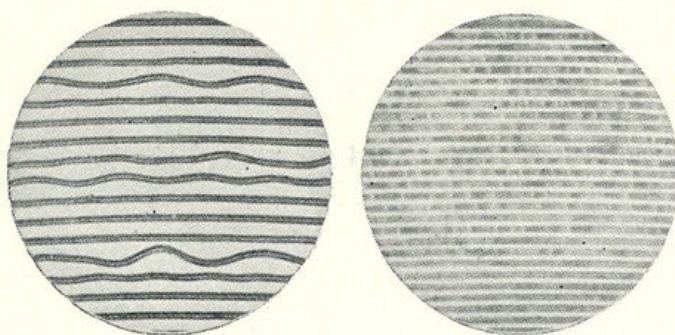
A WESTERN ELECTRIC PORTABLE SOUND-ON-FILM REPRODUCER FOR 35mm. TALKING PICTURES. The path of the film can be followed down from the top spool, first through the projector mechanism and secondly through a compartment where a beam of light is projected through the "sound track" on to a photo electric cell (not shown) and thence onwards to the bottom spool. This type of machine is suitable wherever a large picture is to be projected, e.g. in halls seating up to 800 persons

substitution of a machine for the human voice. Before the introduction of noiseless recording, the film producer was under the grievous disadvantage in that dramatic action could not satisfactorily be punctuated by silence and was driven to expedients such as the inclusion of unnecessary dialogue or the addition of music where it was not needed—merely to cover up the unwanted noise of the machine.

The use of noiseless recording of sound on the film itself raised the perfection of recording to a point where still more elaborate and costly precautions had to be taken in the cinemas to maintain the reproducing apparatus in a condition in which it could do justice to the improved quality of the record. Complicated and expensive instruments had to be developed in order to test the response of the reducing apparatus to frequencies of sound which had previously not been audible above the level of extraneous noise included in records of the older type.

Discs for Educational Use

The improvement in quality of recorded sound by the noiseless method of recording was so great as to call for some major improvement in the method of reproducing sound from records on the film. No such improvement has been forthcoming, but instead the engineers who have been patiently working to improve the disc method of recording and reproduction have found a solution not only of



LATERAL AND VERTICAL CUT RECORDING. These photomicrographs show clearly one of the advantages of the new "hill and dale" method over the old lateral method of cutting records. On the left it will be seen that considerable space is necessary between the grooves, while by the new method (right) the grooves almost touch each other, allowing more recording to be cut on the same area

this difficulty but of another one particularly important in connection with the educational use of films. By reverting to the "hill and dale" method of recording, originally used by Edison in his early phonograph, but with many refinements, they have succeeded in achieving not only a very great improvement in quality, but also have made possible marked economies in the cost of film production and still further simplified the sound-on-disc method of reproduction, already preferred for educational purposes largely on account of its simplicity. The use of the perfected "hill and dale" method has not yet become general, but its advent is now certain and provides a further argument for the use of the sound-on-disc method for educational purposes. The new method will permit of the use of small unbreakable records, of the compression of the record so that one disc can accompany a reel of double standard length, i.e. twenty-two minutes playing without a break, avoid the necessity of changing needles, and increase the life of the sound record to that of the picture—to approximately 1,200 showings as compared with the 100 to 200 showings which represents the longest life obtainable from a "lateral" disc record or from a "sound track" recorded on the film itself.

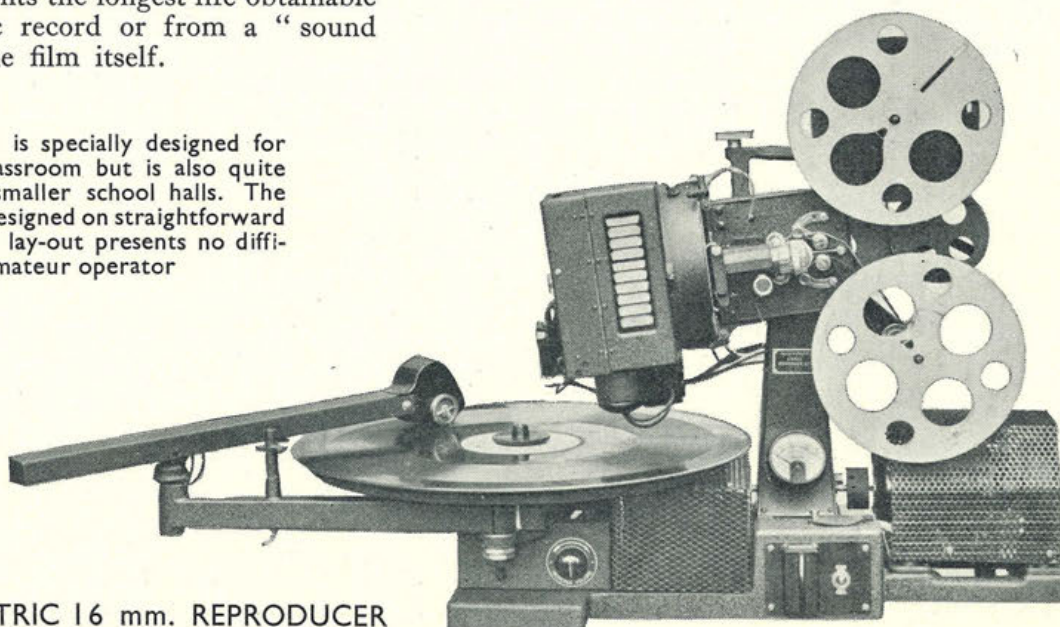
This machine is specially designed for use in the classroom but is also quite suitable for smaller school halls. The controls are designed on straightforward lines and the lay-out presents no difficulty to the amateur operator

From this it will be seen that the development of the talking picture is at last turning from elaborations aimed wholly at improvement of sound quality towards the simplification and reduction of cost which are of the greatest importance in connection with the coming widespread educational use of films. Technical simplification of a process is apt to follow rather than precede the development of a commercial demand and the growing appreciation of the possibilities of the sound film in teaching is now causing the great electrical companies to concentrate on meeting the financial exigencies of the market represented by the schools.

Simplifying and Perfecting

Reproducing apparatus has recently become commercially available which, by the improved methods of disc recording and reproduction makes possible the use of talking pictures in schools at very moderate cost and without need for any technical training on the part of the person operating the projector. At the same time a marked improvement has been made in the optical qualities of small projectors, such that a picture can be projected without necessity for a completely darkened room and the small sixteen-millimeter film can be enlarged satisfactorily to fill a screen even ten feet wide, sufficient for large school halls and other auditoriums. Moreover, the perfection of the disc method of recording, through eliminating the use of a separate film for the original recording of the sound, has reduced the cost of making the original sound record and opened the way for the production at moderate cost of a library of sound films designed specially for use in schools.

The engineer has opened the way for the educationist, in cooperation with the film producer, to make available the amazing possibilities of the sound film as a means of teaching. The stage is set and the orchestra is tuning up.



THE WESTERN ELECTRIC 16 mm. REPRODUCER

THE SCREEN AS A MECHANICAL BLACKBOARD

By H. D. Waley

SINCE the publication of the report on the Middlesex experiment with sound films it has become evident that there are among the educationalists in this country some who cannot be accused of timidity in their attitude towards teaching-machines. Indeed they have swung so far over to the opposite extreme that they are now more liable to be accused of a too uncritical enthusiasm. To many observers it must appear doubtful whether education can swallow the sound film whole until it has first digested fixed projection and the silent film—to say nothing of the gramophone and broadcasting.

At first glance one might be inclined to assume that education had already assimilated the lantern slide, as distinct from the epidiastroscope and the film. But on closer consideration it will be seen that this is not the case. Slide projection—in common with all other forms of projection—still remains in the background of education—to borrow a useful distinction adopted by Mr. John Grierson in his recent broadcast talks. That is to say it is still confined to occasional demonstrations intended to encourage a generated interest in certain spheres of knowledge, but it is not employed as part of the daily routine adopted to enable pupils to acquire that examination-knowledge which is indispensable to most careers. We have got so accustomed to this state of affairs that I think we are a little inclined to accept it fatalistically, without analysing its causes. What, in effect, are the factors at present militating against the use of the screen as a mechanical blackboard? They are, I believe, only three in number. Firstly, projection is assumed to require a darkened room. Secondly the screen is situated so far from the projection apparatus that the teacher has either to employ an assistant or stand at the back of his classroom himself during projection. Thirdly there is an insufficient selection of appropriate slides and films available.

I believe a close examination will indicate that none of these difficulties are insuperable.

Let us take first the darkening of the classroom. There is a tendency to regard the darkness accompanying projection as part of a mystical formula. And indeed it is likely enough that some reasons of this kind do hold good in places of entertainment, and that, where the appeal is to the heart rather than to the head, the dim auditorium may assist the imagination in functioning. But an atmosphere of dreamy romance is not indispensable in the classroom, and we can therefore regard the question here as confined to purely technical considerations.

The success of projection depends, of course, upon the contrast between the light patches on the screen where it is struck by beams from the pro-

jection lamp and dark patches where the beams have been blocked on their way to the screen by dark portions of the slide, film or other original picture. The reason for excluding daylight from the room is that if daylight reaches those parts of the screen which should be black they become grey and the contrast aimed at is diminished.

But it is obviously possible to go a long way towards meeting this difficulty by shading the screen itself, without actually darkening the whole room. Moreover, one can attack the difficulty from another angle and increase the contrast obtained on the screen by employing the smallest adequate picture, remembering that the brilliance of a projected picture increases as its size diminishes. There is also a third expedient for increasing light which can be combined with the two former—the use of a transparent screen. Apparatus already long in use for propaganda purposes, which combines those expedients in various ways, makes it quite clear that there are no insuperable technical difficulties involved in projection in a fully lit room. Apparatus specifically designed for this purpose has never been widely marketed because the manufacturers are not assured of the existence of a demand.

The problem involved is partially that of organising the teaching profession into a body capable of deciding and indicating its own corporate wants in the matter of apparatus.

The same position exists with regard to the second obstacle to bringing projection into the foreground of education—the considerable distance now necessary between the projection apparatus and the screen. Again the difficulty is not one which the designer of projection apparatus would be unable to meet. By the use of 'short-focus' lenses he could halve the 'throw' required at present by most projection apparatus.

The teacher on his side could content himself with a smaller screen than is now usual—say two to three feet wide only. Such a width would be quite adequate for purposes of foreground education, since the audience would then consist of one class only at a time.

This diminution of picture size combined with the use of machines designed to employ short-focus lenses would reduce the necessary distances between screen and apparatus to about one third of those now prevailing. This would enable the teacher, his projection apparatus, and his screen, all to occupy the same end of the room, facing the class. Such apparatus would then approximate closely to the ideal 'mechanical blackboard.' But the mechanical blackboard is clearly useless for foreground education without an adequate supply of projection-material. This problem is not so acute

when projection is to be used for background education, because in that case the necessity for fitting with precision into a pre-ordained curriculum does not arise. In the case of foreground education it is all-important.

Accordingly we may reasonably expect the epidiascope to be the first instrument to appear in the field of foreground education, since the projection library for the epidiascope exists ready-made in the form of book-illustrations, picture-postcards, original photographs and drawings, and other similar material. In fact for purposes of foreground education the epidiascope seems likely to become the standard instrument of fixed projection, to the exclusion of the transparent slide lantern.

And now we come to the question on which the attention of educationalists is chiefly focussed at the moment—what are the first steps towards rectifying the scarcity of films suitable for use in schools?

The report on the Middlesex experiment and the article by Mr. Hoare in the last issue of *SIGHT AND SOUND* emphasise two conclusions on this subject—firstly that close co-operation between educationalists and film-producers will be necessary, and secondly that the production of sound-films as opposed to silent films must be envisaged.

The first of the findings will, I imagine, meet with universal agreement, but the latter seems, as I have already indicated, exceedingly controversial.

Mr. Hoare's own estimate of the average price of production of a sound-film is £1 per foot. The average price of production of silent films is perhaps five shillings a foot, possibly less. The retention of the silent film would therefore multiply the repertoire of the film library obtainable with a given sum of money by at least four. When we are considering the possibility of fitting the film into foreground education this becomes an immensely important point.

I look at this question from the simple point of view of how many films will a given sum purchase because, in spite of the pronouncement in the Middlesex Report that the educational authorities must content themselves with nothing but the best, I suspect that in the end they may follow the example of that considerable portion of the human race which purchases what it can afford to pay for, rather than what it feels that it deserves to possess.

But, even if one arbitrarily disregards the question of library and apparatus costs, the question of technical complications in sound-film projection would still remain as a factor in retarding the advance of projection from the background to the foreground of education. The ideal of projection apparatus should be such simplicity that handling, not only by the science masters, but by all masters becomes feasible.

Sound projection apparatus is not only extremely far at present from reaching this ideal, but it is extremely far from offering to educationalists such standardisation of method as would render possible the building up of a central library catering for all projectors. At the moment at least four mutually exclusive methods of sound reproduction from

sub-standard film are being proposed by firms of high standing.

In these circumstances it is hard to see how the educational authorities can go much further than giving experimental use to a few machines of each type for 'background' education purposes.

Meanwhile every school which possesses a projector can carry forward the work of bringing projection into the foreground by experimenting with daylight projection, projection at short range, and all varieties of spoken commentary. They may even, as Mr. Gow suggested in the last number of *SIGHT AND SOUND* launch forth into film production. For while it is true that teachers will have to co-operate with producers in forming the national film library of the future, it is also true that the value of their co-operation will be far greater when they have themselves experimented somewhat with existing material. No one, I suppose, would be optimistic enough to envisage the next ten years of educational cinematography as anything but experimental, and this in itself is an argument for silent projection, since it is a rule, recognised as valid amongst those who have had the misfortune to be much associated with experimental work, that it should be carried out with the cheapest material from which relevant results can be obtained.

In any future experiments performed to furnish material for comparison between the value of sound and silent films it is to be hoped that not only will the merits of various kinds of spoken commentary be carefully compared with those of the mechanical commentary, but that also clear distinction will be made between the type of sound film which results from simultaneous recording, and film to which a spoken commentary has been subsequently added.

The former type of production is capable of possessing qualities which the teacher's spoken commentary cannot contain—the exact timbre of an animal's cry or a famous individual's voice, for example, not to mention the whole range of musical sound. It is on such ground as this that the sound film contrasts most favourably with the silent film. It is, however, to be noted that this ground lies almost entirely outside the scope of foreground education. It must also be borne in mind that further experimentation may indicate that the film is here trespassing somewhat on the legitimate territory of the gramophone and wireless.

In any event it is clear that a further prolonged period of experimentation is indispensable if such funds as may become available for the increased use of projection in schools are not to be dissipated in large-scale attempts to achieve the impracticable.

The view here expressed that the most desirable direction in which to press forward is towards the establishment of projection as part of the daily routine of foreground education is, of course, a view from which many might dissent, while its practicability still remains to be tested.

My fear is that the practicability of bringing projection into the foreground may be seriously prejudiced by a too hasty flight from the silent film.

FILMS TO SEE

by

C. A. LEJEUNE

MADCHEN IN UNIFORM (Film Society)—German dialogue picture, with superimposed English titles, made by a woman director, Leontine Sagan, with a cast entirely composed of women. A study of the effects of rigidity and repression in a girls' boarding-school, sincerely and beautifully handled, with acting of the first order. This is a picture that every teacher and parent should see, but it is not for the young and impressionable. (Illustration above).

KRISS (Filmophone)—A true story of love and revenge in the island of Bali, in the Dutch East Indies; a silent film, played entirely by natives, and post-synchronised with musical score and a rather blatant commentary in English. This is not another *TABU* but it breaks new territory, and the native dances and rituals have the beauty of real pantomime. A film for the occasional picturegoer only; children will find it dull and incomprehensible and the adult "fan" will find it slow.

ENGLAND AWAKE (Wardour)—You can take the whole family to this account of British achievement in colonisation and industry since the days of Wellington, but add your own urgency to its moral—by looking back instead of forwards, by evading difficult issues, it just fails to drive the lesson home. Made at Welwyn by John Buchan and Bruce Woolfe, and directed by Stuart Legg, a young newcomer who has since worked on a school film at Chesterfield and promises well. Material mainly library cut-outs; commentary clear but flamboyant; figure of Wellington gives a false note to an otherwise genuine whole.

IL EST CHARMANT (Paramount)—Henri Garat in a French extravaganza with all the American Paramount polish; gay, easy, foolish, with charming tunes and pleasant personalities. It has more sophistication and less wit than the Clair films, and needs a good knowledge of French to follow the dialogue explicitly, but the main story is clear enough. Try this on the late teens and the early twenties—they'll love it.



NORTHERN LIGHTS (Albion)—An account of the Courtauld expedition to the Arctic, simply and quietly told, without any subtleties or wisecracks; it is not an epic, but it does give a profound idea of British coolness and spirit, and the photography is remarkable. For every age.

IT'S TOUGH TO BE FAMOUS (F.N.P.)—Douglas Fairbanks, Jr., in a light-hearted story of a national hero *malgré lui*, which runs from laugh to laugh on the smoothest of wheels. Unreservedly recommended for the whole family.

WAR IS HELL (W. & F.)—A polyglot talkie of the battlefields, made chiefly under German and Russian influences, with dialogue cleverly compound of French, German and English. The theme is international brotherhood; the treatment is raw and curiously simple; it puts facts plainly and naively for simple minds, with the broad outlines of a cartoon. Adult entertainment only.

THE BATTLE OF LIFE (International Prod.)—A silent document of natural survival, directed by a Russian, V. Korolevitch, superbly photographed by a German cameraman, and synchronised, rather tediously, in America. The fight of the animal kingdom against hunger, drought, flood, fire and disease has been dramatised to the highest degree of intensity; the censor has modified the present copy, but no amount of cutting could make this film anything but ruthless. A magnificent technical achievement, which children, in spite of its "U" certificate, should on no account be encouraged to see.

HELL DIVERS (M.G.M.)—A spectacular romance of American naval aviation, with false sentimental

values and ordinary studio playing, that gets over every criticism by its superb and breathless performance in the air. There has never been such photography of flight and speed among the clouds; the precision of individual and massed movement, the smoothness and ease of accomplishment, build up a propaganda film for the American services that gets a response from every nerve. Let the boys see this—the sentiment won't hurt them, and the air stuff will put them on their mettle.

Other Films Worth Seeing

FORBIDDEN (A) (United Artists); ARROWSMITH (A) (United Artists); THE BEAST OF THE CITY (A) (M.G.M.); TARZAN THE APE MAN (U) (M.G.M.); GENTLEMAN FOR A DAY (A) (First National); A HOUSE DIVIDED (A) (Universal), THE FAITHFUL HEART (A) (Ideal); MOR VRAN (U) (Film Society).

BOOKS WORTH READING

THE PROJECTION OF ENGLAND by Sir Stephen Tallents (Faber & Faber 1s.)

TALKING PICTURES by Bernard Brown. (Pitman 12s. 6d.)

FILM PLAY PRODUCTION FOR AMATEURS by G. H. Sewell. (Pitman 5s.)

FILMS: THE WAY OF THE CINEMA by Andrew Buchanan. (Pitman 5s.)

Sir Stephen Tallents' pamphlet, *THE PROJECTION OF ENGLAND*, is customarily included in modern film bibliographies, but to treat this politico-literary monograph as a book about the cinema is to interpret its inward rather than its expressed concern. The author, although he writes strictly as an individual and not in his official capacity as Secretary of the Empire Marketing Board, makes a case for the organisation of all the modern propagandist forces—the cinema, the radio, the trade exhibition—towards the fuller expression of British life and ideals. He is interested in every medium that can carry Britain to the ends of the empire, and raise her prestige among foreign nations. If his peculiar interest in the film as a propagandist medium emerges from the pamphlet, it is merely that Sir Stephen Tallents, like every modern thinker, has realised that the film in these days gets most swiftly, most surely, and most perilously at the popular mind.

THE PROJECTION OF ENGLAND offers a plea for the prestige film in an address as gracious and graceful as any published bit of English prose since the days of Addison and the pamphleteers. It is, perhaps, a little too graceful for those of us who know and are concerned for England in her rougher moods. It does not quite convey the sense of England, working, sweating, starving, struggling, that any northerner carries in his blood. It is a sane England that Tallents draws, an old-established, kindly mother-country, whose fault is her diffidence, and whose need is a school of national thinking which may parallel in some degree the colleges of navigation established in Spain and Portugal in mediæval times.

No one can persuade me that Sir Stephen Tallents does not realize the peculiar tilt of his view of England. He is far too shrewd a diplomat to be accused of haphazard renderings. He has given us a particular England for a particular purpose—the stimulation of interest among the classes above the subsistence line. He has made in his book, I think, just one major mistake, and that is the alienation of Scottish readers by his insistence on "England" as the key-word for patriotism. With this single exception every phrase is wisely measured—the material and the method are wedded with a precision rarely found in the literature of the screen.

There is no fine writing about the other books in my list. They are books by practical craftsmen, both professional and amateur, and their *forte* is fact.

Bernard Brown's *TALKING PICTURES* which runs into a second edition, is still the most comprehensive and detailed of the technical text-books. Anyone who owns it has a complete encyclopædia ready to hand of the process and mechanics of talkie production and exhibition; it is admirably clear in general lay-out, but presupposes a certain technical understanding in the reader, or at least a technical bent.

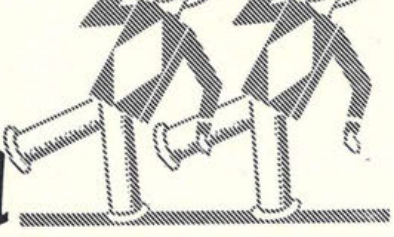
G. H. Sewell's book defines its audience in its title; it is an invaluable handbook for amateurs who are concerned with the intricacies of motion picture-making, either on standard or sub-standard film. It gives clear directions for every stage of the work, from the preparation of the initial script to the final exhibition; defines the position of each member of the working staff, and keeps the price within limits that take amateur film-making out of the luxury class and present it as a reasonable gateway to a profession.

Andrew Buchanan's contribution to the Pitman Art and Life Series provides a happy compromise between the professional and the amateur cinema. It should touch a wide circle of readers, for it is one of those rare books that speak with the authority of experience, but have never quite lost the infectious enthusiasm of the layman for his hobby. Mr. Buchanan has a right to theorise, as well as to dogmatise, about the production of films; the *Ideal Cinemagazine*, which he edits weekly, has been for many years past one of the best regular features in the British trade. The theoretical chapters are sound, and their value is increased by the illustration of the practical sections; these give the whole process of film-making as a practical craftsman knows it, but so simply that the least technically-minded reader can appreciate it.

I recommend this book unhesitatingly as one of the few published documents on the cinema that should be bought, read and marked for future enjoyment; with Gilbert Seldes' *ONE HOUR WITH THE MOVIES AND TALKIES* it is probably the most reliable treatment yet given by a writer to the much-discussed but little understood science of the motion picture screen.

C.A.L.

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TECHNICAL AND TRADE REVIEWS

TECHNICAL ASPECTS OF MODERN AIDS TO EDUCATION

WHILE, and if, the teacher and the propagandist making use of mechanical aids is required to possess any great degree of technical skill in the handling and repair of his equipment, the advancement of the new methods will be hindered.

The reproducing instruments which come within the scope of this journal, if they are to be widely used, will be expected to reach the standard of reliability of, say, the modern low-priced motor car in the hands of an ordinary owner-driver. Alternatively, the manufacturers must provide, at reasonable charges, a system of regular inspection and service.

The editorial board of SIGHT AND SOUND proposes to develop a reliable technical section of the journal. The section, which will cover every practicable method of sound and view reproduction will eventually include the following features:—

- (1) Discussions of the general technical requirements of reproducing apparatus.
- (2) Reviews of apparatus.
- (3) Discussions between advocates of different systems designed to achieve the same or similar results.

Much of the apparatus with which we are concerned is already used for public or domestic entertainment, and though reproducers suitable for educational and similar purposes seem to come half way between those two extremes, the existence of accepted technical standards makes it possible to say what is, and what is not, a good reproducing machine for the work it is required to do. Since space is limited, it will be understood that mention of any particular instrument implies the approval of a qualified contributor and of the member of the editorial board responsible for the technical section. Such recommendations as are made will necessarily be on the conservative side, but items of a new or experimental character will receive attention.

CHOOSING A FILM PROJECTOR

By L. J. Hibbert

THE requirements outlined at the conclusion of the first instalment under this title included:—

- (a) a clear bright picture free from tremor;
- (b) no tendency to overheat the machine on long runs;
- (c) no tendency for the film to overheat or blister on stills;
- (d) as great a measure of silence as possible when running;
- (e) complete freedom from anxiety or attention on the part of the teacher once the machine is set to work;
- (f) ability to reverse the film and to project backwards without re-threading or altering take-up hands.

Let us now try to find out how these several points may be secured in designing a projector.

(a) By 'clear' is here meant a sharp, well-defined image; and this is obviously a measure of the optical quality of the lens used; some of the cheapest machines are not above criticism on this point, and

one of the more expensive models might be fitted with improved optical units. A good criterion for the non-expert is to ascertain as to whether a more expensive lens may be fitted as an option. 'Bright' signifies luminous and the amount of light obtainable on the sheet is a function of the amount at the source, the size of image used, the relative aperture of the projection lens as distinct from its defining power, the depth of printing in the film itself and also, as far as the observer is concerned, the quality of the screen as a reflector of light. All other things remaining equal, it is therefore a fairly good guide to picture brightness as seen if the input to the light source (lamp) in watts be noted. Relative lens aperture is a sure indicator of the power to transmit light possessed by a particular instrument. As for the screen, a silver screen will show a brighter picture from a point close to the projector than is obtainable with plain white surfaces, but these latter show a much brighter film at an angle to the line of projection than do the silvered sheets. For an audience of say, 6 to 8 persons, the silver screen is good; for more than these numbers the white is to be preferred. The 'beaded' screens lie between the two mentioned above and give a brighter side view than the silver screen at any oblique angle but not so bright as the plain white. For small classes the beaded screens offer a real gain in brilliance. Tremor is usually due to vibration; this may arise in the projector, in the stand or bench on which it operates, or may be a separate defect due to bad or worn perforations in the film.

(b) Overheating on long runs is due to a number of causes any or all of which may operate in a particular machine. A serious fault is the incorporation of a resistance in the machine itself. Resistances must generate heat, unless great bulk is not objected to, and so any built in resistance is certain to help in warming up the machine. The motor again is a potential source of heat, and is so owing to the desire to reduce bulk and weight of projector to a minimum. A third supply of unwanted heat is the light source; here most of the power supplied to the lamp is wasted in producing heat and only a small fraction goes to the useful end of light manufacture. In a well designed projector the lamp house should be cooled and also insulated from the body of the machine so that the heat conducting or radiating paths to the actual mechanism are reduced as much as possible.

(c) Since the image on the screen varies in its luminosity, owing to absorption of light in the film itself, and also since the light beam is accompanied by a much more powerful heat beam, the film becomes heated in its passage through the 'gate' of the projector. When still pictures are shown, by causing the feed and take-up mechanism to remain stationary, the amount of heat imparted to the film becomes very great and in the absence of

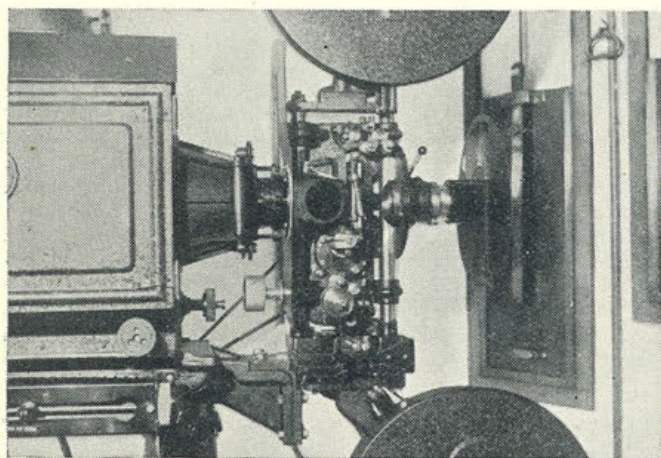
precautions may suffice to blister or char the film. This risk may be lessened by cutting off some of the heat before it reaches the film or by removing after the film is reached. The first method would be ideal if we could do it without lowering the amount of light as well, but the heat resistor glass and the metal gauze screens that are used do lower the brightness. The second method is to blow cool air over the film and if this is well done it is effective and does not imply loss of definition. The best method seems to be the combination of the air blast with a heat filter that comes into action when and only when the film is made to be stationary.

(d) Silence in running is usually a measure of the silence of the motor. High speed small motors are usually prone to noisiness, owing to the air catching nature of the revolving armature. There is room for the use of a small slow speed induction motor provided that there is sufficient speed for the air blower. This in itself will probably give rise to an audible hum.

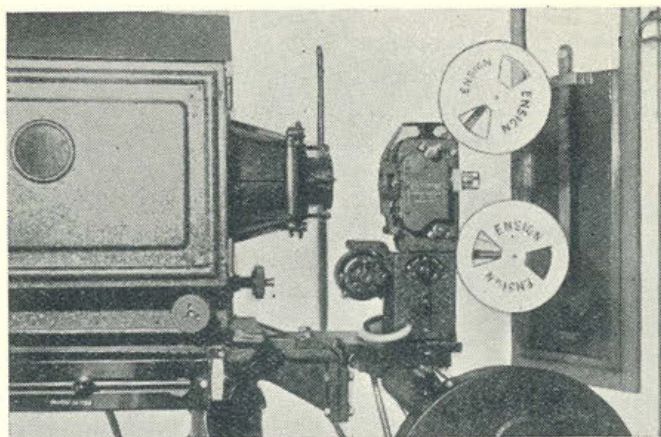
(e) The advantages of being able to forget the machine, to walk away from it, to concentrate on the picture are enormous, but only robust, well designed and well made machines will offer these facilities. Some machines, if not started with the intermittent action properly engaged, gaily proceed to tear away whole strips of film. Others in like circumstances only fail to project a recognisable picture and do no damage to the costly film. If a machine will run for an hour without getting so hot that it is uncomfortable to the hand, if it will show a steady picture of suitable brightness, and if in addition it does not tear film when the perforations do not engage properly, then it may be expected to give good service to so exacting and critical a user as a classroom teacher.

(f) The ability to reverse not only the motor but also the film so that movement in reverse order may be shown is not an essential but a valuable possibility in a teacher's projector; this is apart from the advantage of being able to return to a frame or scene previously projected about.

Moving parts in as perfect a balanced condition as may be possible, generously sized bearings,



Standard size Projector with standard projector head, for alternate use with substandard head as above (Newton)



The Newton adaptation of Standard Projector with 16 mm. Ensign head, giving a 9 ft. image

adequate oiling facilities, low centre of gravity should be sought for if the machine is to be free from shake or tremor and to run over an extended life without serious replacement costs. Light gate pressures spell long life to the films and ought not to result in unsteady projection. The reader must consider the several points detailed above and determine the combination best suited to his or her requirements, or alas, to the depth of pocket of the L.E.A. concerned.

L.J.H.

Projecting Large Pictures from 16mm. film

The increasing use that is being made by scientists and explorers of the 16mm. film for record and educational work which will eventually be shown to large audiences, is making it necessary to find some means of projecting this size of film from a greater distance to obtain a larger picture than is possible with substandard projectors designed for home use.

The greatest width of picture obtainable with a 16mm. projector has been 7ft.; but Messrs, Newton and Co., of 72, Wigmore Street, London, W.1., have recently carried out for the Royal Geographical Society an adaptation of a sub-standard projector which gives a picture of 9ft. from a distance of about 65ft. We understand from the Royal Geographical Society that the apparatus is satisfactory in every way and gives a brilliant picture clearly visible in a hall seating 800. An ordinary standard projector was fitted with a 16mm. Ensign head, complete with its own motor, for use alternatively with the 35mm. projector head. Messrs. Newton are also at work on a 16mm. projector combining the Ensign projector head with an arc lamp and cooling device, and this can be used for distances up to 80ft. giving a picture up to 9ft by 12ft.

Y.M.R.

Substandard Sound Projectors

R.C.A. 16mm. Sound Projector

THE R.C.A. system of 16 mm. talking film is already a demonstrated reality. At the Kinetograph Exhibition at Grosvenor House recently the apparatus ran for long hours under trying conditions and the only point of adverse criticism

that I could lay hold of was that the heat generated by the resistances seemed rather too great for comfort when long shows were given. One of the blessings of the British electrical grid scheme will be that wasteful resistances with their heat output will no longer be needed. A small transformer would save waste and heat at the cost of a little extra weight. The picture shown by the R.C.A. was good and the sound reproduction excellent. The whole outfit is compact yet accessible, and the extra resistance not too bulky. In every way the R.C.A. people are to be congratulated on a first class production.

Musikon (Will Day, Ltd.)

The other apparatus seen is the preliminary model of the Musikon of Will Day, Ltd. The outstanding feature of the machine (projector) shown to me is that in spite of its obvious experimental character the speech and picture reproductions are both good quality and are likely to be excellent and when the final model is ready for demonstration. In this arrangement the sound track is much narrower than is usual and the lines of variable density run diagonally across the track width. Mr. Day claims that 6,500 is about the upper limit of frequency response and this with a film speed of 20 pictures per second instead of 24. It is hoped that the complete outfit, camera, projector, microphone, loud speaker amplifier etc., will not cost the public more than about £90. At this price the possibilities of amateur talkie making are brought nearer and the ambitious schoolmaster can look forward to the production of his own school films that will show the things he desires to be shown and not show the educationally irrelevant things that appeal so much to the producers who keep one eye on the box office.

I await the further progress of this interesting system with some confidence and more impatience.

L.J.H.

A.W.H. (Portable)

I shall not be able to make a close inspection of the interesting portable A.W.H. projector for 35 mm. films, also exhibited at the Grosvenor House exhibition, before this issue goes to press. The complete sound on film projector with a non-synchronous turntable for incidental music and similar uses seems reasonably priced at £300. It is quite mobile and plugs into the ordinary lighting supply. A fuller notice will appear in the next issue.

VALVE AMPLIFIERS AND LOUD SPEAKERS

THE list of approved wireless receivers to be issued by the Central Council for School Broadcasting is due to appear after the publication of this issue of SIGHT AND SOUND, and we hope to be able to discuss it in our autumn number. The principle of an approved list will be welcomed both by educationalists and responsible manufacturers.

While some of the wireless receiving equipment in schools is admittedly out of date, it is doubtful whether the modern self-contained receiver or radio-gramophone offers the best method of reproducing radio and records in schools and small halls. Receivers subject to boom due to inferior cabinet work will presumably not find a place in the list mentioned above but for the purposes we are dis-

cussing loud speakers operated at some distance from the amplifier itself are preferable both from the technical and aesthetic aspects.

The argument is strengthened by the near possibility of comparatively inexpensive systems of sound film reproduction in which existing amplifiers may be employed. The conventional and convenient location of the loud speaker when used with sound films is near the screen and, at this stage, it is clearly desirable that the amplifier and projector should be controlled by the teacher without extra assistance.

An amplifier of this kind will naturally be designed for a generous power output and it will be genuine economy to build it with an ample margin in the matter of mains transformers, chokes, condensers, resistances, etc. Most authorised agents of the well-known manufacturers will be able to advise competently on the purchase of a suitable amplifier.

Where moving-coil cone loud speakers are used, a convenient form of baffle is that described in the current issue of the B.B.C. Year Book. H.R.P.

RECORDING AND REPRODUCTION

Foreign Records

The delay that is usually necessary in obtaining foreign recordings, and the difficulty of sampling them before purchase deters most people from searching far afield for additions to their gramophone library. H.M.V. Connoisseurs' Catalogue, the Decca-Polydor productions, and (for those who like local colour) the Parlophone Music of all Nations series have done much to fill the gaps, but for the widest possible selection we recommend a visit to Levy's gramophone stores, who hold, at their branch in East London, stocks of every record published, including Albanian, Greek and Chinese specimens. A smaller selection is available at their Sound Studios in Regent Street.

At these Studios it is possible to make a record under efficient professional conditions at a reasonable price; a ten-inch recording costs four guineas for the first six copies and 3s. 6d. for each subsequent copy taken from the matrix. This firm has made, with the permission of the B.B.C., special records of broadcast programmes, and their standard of reproduction is extremely high.

The Dailygraph

A new type of dictating and recording machine that presents important possibilities in educational and research work is the Dailygraph, which we have seen in use in a London office. In this apparatus the voice is recorded on spools of thin wire passing between a set of electro magnets. The recording machine includes the wire spool (containing about three miles of wire—running time 50 minutes) and two radio valves, is placed next to the transcriber; the controlling station, fitted with a small microphone, is used by the dictator. The Dailygraph can be connected by means of a button switch to the telephone, and in this way a permanent record can be made of any telephone conversation. The spool can be reproduced an infinite number of times without any deterioration in the quality of sound reproduction and for ordinary dictation the wire can be cancelled and demagnetised by running backwards on the same machine after transcription, and in this way can be used again and again. The cost of £150 includes complete installation and three months' service.

ELECTRICAL TEST APPARATUS

Messrs. Muirhead & Co., Ltd. are developing their electrical test equipment for modern research along lines which will make them applicable to educational purposes. A preliminary inspection shows that the design and workmanship of this firm's products maintain their high standard.